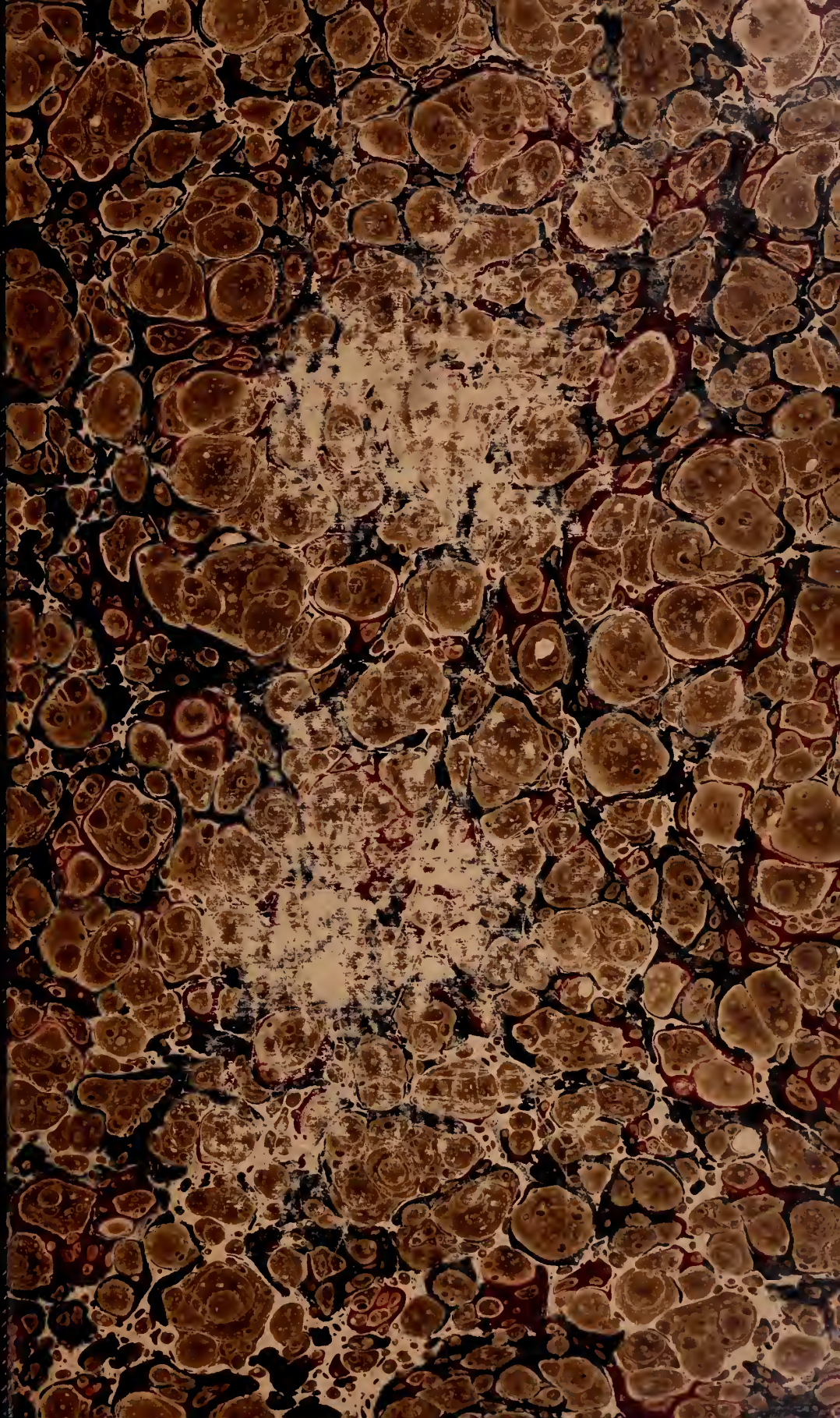

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THE MALIGNANT FACTOR IN TUMORS.

By CHARLES MINOR BLACKFORD, JR., M. D., Atlanta, Ga.

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Next to the injuries received in battle or the chase, it is probable that the tumors first attracted attention from primitive surgeons. The inconvenience of the benign growths, and the suffering and fatal termination of the malignant ones, were serious afflictions at a time when physical activity was necessary to procure the means of livelihood; and it is strange that so little should have come down from the writers of antiquity in regard to them. No doubt some of them were classed as leprosy, as were many of the skin diseases, but even in "classic" ages, the references to tumors are few and indefinite. Galen noticed the peculiar appearance of the veins over carcinomata, and called the tumors cancers, from the highly imaginative resemblance to a crab in the mass of dilated blood vessels; but with this exception, it is comparatively recently that any scientific nomenclature or classification has been attempted.

The earliest one was based on the prognosis, and neoplasms were divided into benign and malignant—a classification of which Virchow wisely says that it is as logical as it would be to divide plants into those having poisonous properties and those not having them. A physiological classification was next attempted, and, following Hunter, who had demonstrated the resemblance between granulation and the formation of blood vessels in the embryo chick, Rust and Kluge described neoplasmata as having a circulation developed in themselves, independent of the patient; in other words, as living on the body as the mistletoe does on the oak. When comparative anatomy was first studied, it became very popular to draw parallels between pathological states and the normal condition of lower animals, and many analogies were discovered, especially in malformations due to defective development. The principle of atavism was unknown, but acting on these analogies, "comparisons were instituted between new formations and familiar parts of the body. Thus, Johan Friedr. Meckel, the younger, spoke of mammary and pancreatic sarcoma." (Virchow, *Cellular Pathology.*)

As a natural result of this comparison, a new classification arose, which, though erroneous, was a great advance in pathology and paved the way to a better comprehension of these growths. It was seen that some of the tumors are composed of tissues that normally exist in the body, while others are of an entirely new structure, unlike any existing in normal man. It was claimed that these latter were formed from a pecular kind of lymph, a variety that differed in some way from the lymph of which it was thought that the body was developed; so Bichat, the leader of those holding this view, called the growths that resembled normal tissues *homoplastic*, and the lymph from which he asserted them to be formed, he called *euplastic* lymph. The other neoplasmata he called *heteroplastic*, and, as these are more malignant than the others, he called their lymph *kakoplastic*. The German pathologists took up this idea with avidity, and, attributing the kakoplastic lymph to some change in the blood, eagerly sought for the change. The serum albumin was believed to have undergone some alteration, and even Rokitansky thought that he could find the kakoplastic material in diseased albumin.

To Virchow belongs the great credit of showing that the true comparison was not with any tissue that might be in the body, but with the one in which the tumor was developing, or, to state it in his own words,* "That there is no other kind of heterology in morbid structures than the abnormal manner in which they arise, and that this abnormality consists either

Cellular Pathology, trans. by Chance, pp 92 and 95.

in the production of a structure at a point where it has no business, or at a time when it ought not to be produced, or to an extent which is at variance with the typical formation of the body." Thus he explains that hairs, quite natural in structure, would be heterologous if found in the brain, or that an enchondroma, if found in adult bone, is heterologous, because perfect bone no longer has any cartilage in the parts where enchondromata form. If this definition of heterology be accepted, and it seems impossible not to accept it, any connection between heterology and malignancy is destroyed.

Careful study of Virchow's epoch-making book reveals many suggestive passages, and looking at it in the light of our recent knowledge, we can but wonder that one who did so much should have stopped on the threshold of the greatest discovery ever made in pathology. The resemblance he traces between the new formation of tissue in tuberculosis and the gall-nuts formed on a tree as a result of the deposit of the egg of some insect in its bark, foreshadows the modern teaching of the protective influence of leucocytes; and had he but known of the bacillus tuberculosis, his pathology of the affection would have been perfect. With the tuberculous nodules he classes the cancerous growths, and the more closely we study them, the more does this resemblance impress us.

The classification most generally adopted today is based on the histological structure of the growth, and in accordance with it, various systems have been drawn up arranging the growths in groups. On studying any of these systems, it will be found that however perfect the grouping may be from a histological standpoint, it is defective from a clinical one, for the structure of a neoplasm seems to give no clue to its malignity or harmlessness. Our textbooks are filled with elaborate descriptions of the minute structure of the different neoplasms, and every device is used to show with fidelity the appearances seen under the microscope, but every pathologist will say that so far no absolutely reliable means of differentiation has been found. The benign papilloma or adenoma will present appearances that so closely resemble the malignant carcinoma that it is impossible to tell the one from the other, and it would, indeed, be rash to attempt a diagnosis without the clinical history and all other facts in regard to the growth that might be obtainable.

The etiology of these neoplasms is even in a state of worse confusion than is their histology. It may be said with but little exaggeration, that nothing is known of it at all, for no rule can be laid down that has not so many exceptions as to invalidate the rule. Irritation seems at times to produce them; heredity seems to give a predisposition toward them; but the first is by no means invariable, and as to the second, we see many cancerous parents with healthy offspring, and malignant growths often arise in patients free from any hereditary taint. Occasionally benign growths suddenly assume malignancy, or a tumor that has aroused the gravest apprehensions, may alter its character and cease to be a danger. The very return of the "malignancy" is unknown, and no good reason has ever been assigned for the fatal result that follows them.

A serious obstacle to the study of pathology and to its ever becoming an exact science, is that it is forced to depend so largely on analogy for its data. When a hypothesis is advanced, the only modes by which the truth or falsity of it can be determined is by waiting for a lucky chance to confirm or disprove it, or by unsatisfactory experiments on some of the lower animals. In this respect it stands much as did anatomy before human dissection was permitted, with this difference, however, that even the most enthusiastic pathologist would not have the restrictions removed. Human life is too valuable to be risked in an experiment, no matter how humane may be its ultimate object or how important the problem sought to be solved. Analogy is, however, a dangerous premise, for there is ever an element of doubt as to how far the analogy extends, and things that appear similar on first inspection may differ radically when examined closely.

Bearing this danger in mind, we may none the less gain a valuable hint as to the pathology of these fearful intruders, by studying the two most common diseases that produce new tissue. These are syphilis and tubercle. As mentioned above, Virchow, the father of modern pathology, was struck by the resemblance between tubercular "deposits" or growths, and the earlier manifestations of the tumors, and was inclined to classify tuberculosis as a variety of cancer. The analogies are certainly striking. Both arise as a group of cells more or less unlike the tissues in which they lie, and from a small beginning increase with a varying rate of speed. Both have a tendency to spread, not merely locally but into distant parts of the body, apparently conveyed by the blood or lymph channels, and, in the ordinary course of events, both are fatal. If we look into the mode by which this fatal result is produced, we find that it is by mal-nutrition, that on account of some interference with the nutritive processes of nature, the body fails to receive the

benefit of ingested food and wastes away. So striking is this symptom in tuberculosis that it gave the name to the disorder, and among the laity it is generally called "consumption." In the later stages of cancer, a similar condition is produced, which we call cachexia.

We read with half-pitying amusement the elaborate descriptions of tubercular tissue as given in works published but a few years ago, and regret the laborious and painstaking research that was wasted in the effort to find some cell or group of cells that would be characteristic, and that would allow a histologist of ordinary skill to diagnose the disease with certainty. We marvel that the bacillus should have escaped observation for so long, and wonder that the very variability of the lesions did not lead men to think of them as manifestations of some general disorder, and yet we are similarly situated as regards the cancers, and we do nothing.

The pathogenesis of the tubercular nodules is well understood. It is the effort made by the leucocytes and the connective tissue cells to destroy the bacilli, or, failing in this effort, to confine them to a limited area, for in the central portions of the nodules we may usually demonstrate the bacilli, and in many cases they may also be found in enlarged lymph glands in the proximity of the lesion. The relation of the specific micro organism to this affection is thoroughly established, and the mode of extension and recurrence is well understood. In preparing culture tubes for bacterial investigations, we carefully sterilize the medium, and should we find a growth developing in one of them before we have inoculated it, we know that our sterilization was incomplete. Similarly, when we have removed a chain of tubercular glands and the tuberculosis re-appears, we know that either all of the infectious material was not removed, or that the patient became re-infected after the operation. The idea that the growth in the tube of the tubercular nodule in the patient arose spontaneously is rejected as impossible.

But self-evident as are these facts to-day, it has not been very long since both of these propositions were considered as not only possible, but most probable. Exposure to cold, a sudden chilling of the body, anything that reduced the general condition of the system, was regarded as a cause of "consumption," and is so regarded by the laity to day. It is but a few years since the advocates of spontaneous generation were finally silenced, yet already we consider abiogenesis as absolutely absurd; and, as a natural consequence, any spontaneous development of tuberculosis as equally so. Tuberculosis cannot develop save as a result of infection by its specific bacillus, and exposure, heredity, and the whole list of alleged causes are but circumstances that lower the resisting power of the body.

In syphilis, another disease that is attended by the formation of new tissue, the histogenesis is not so readily explained. The gummata appear as a late manifestation, and their relation to the specific micro organism is unknown, because the micro-organism itself has not yet been satisfactorily demonstrated. The fact that gummata are only found in syphilitic subjects, points irresistibly to the conclusion that they are consequences of the infection, but our knowledge of their pathology is very incomplete. From the period in the disease at which they appear, we are probably justified in saying that their function is not protective, but further than this we cannot go.

Compared with these two affections, the malignant growths acquire a new aspect. If a large tubercular mass or a syphilitic gumma be removed, only a temporary relief is expected, for we recognize that the tissue in either case is not a disease in itself, but a local manifestation of a general condition. We expect a new gumma to form, either on the site of the old one or elsewhere, and we are not surprised at the recurrence of the tubercle. In the latter case, however, were the whole of the infectious material extirpated with the neoplasm, there would be no return, unless there were a new infection and the process began again *de novo;* but in syphilis we recognize the futility of extirpating the true casue by a removal of the growth, and all that is expected is a relief of local symptoms.

Is not the experience of surgeons much the same with the malignant tumors? In some cases, after early and complete removal, there is no recurrence; in others, after apparently as complete extirpation as before, there will be a recurrence either on the seat of the original growth or in some distant part of the body, and there seems to be no certainty as to which of these two results will follow. In case of recurrence it is said that all of the malignant tissue was not removed, and the extent of denudation has steadily increased, but statistics are not encouraging at best, and even if they pointed more strongly to permanent cure following these extensive operations than they do, the number of reported cases is too small and the time since the adoption of the new method of operating is too short for unimpeachable deductions to be drawn.

Returning to the histological structure of the malignant tumors, it should be noted that there is nothing in their structure to occasion their grave sequellæ. The two types that are considered as "malignant," are the carcinomata, and a glance may well be given each. The sarcomata are of the general type of the connective tissues, but resemble these tissues while they are still in the embryonic state. But what is there in embryonic connective tissue to be a menace to life? Whenever a wound heals by granulation, the new tissue passes through embryonic stages and no ill results. In the vitreous humor we find a tissue, Virchow's "mucous connective tissue," that is identical with that of Wharton's jelly and is of an embryonic type, but no evil follows its presence. If the vitreous is removed, it is reproduced sparingly, if at all, but the removal of a portion of a sarcoma often seems to stir the remainder to increased activity. By this comparison, or rather contrast, it is not intended to convey the impression that the vitreous and sarcomata are similar in structure; they are far from being similar. But if the malignancy of sarcomata is connected in any way with the fact that they are composed of embryonal tissue, and if that fact is held to explain their rapid growth, why should the vitreous, also composed of a tissue found in fœtal life, be harmless and manifest little or no tendency to reform if it be removed in whole or in part? There seems to be some missing factor in the equation.

A typical sarcoma and a typical carcinoma differ widely in structure, but in some of the varieties of the former it is difficult, if not impossible, to make a diagnosis by microscopical means alone. The embryonic connective tissue develops in many ways, and where bands of fibres form alveoli enclosing small round cells, the resemblance to the carcinoma is well-nigh perfect. Again, it is often difficult to tell sarcoma from granulation tissue, and often a sarcoma will apparently arise from a scar. The word "apparently" is used, for though so far as our present knowledge extends, it does so arise, there seems to be a "missing link" in the process. A law of nature knows no exceptions, and were nothing else to enter into these cases, a sarcoma would develop from every scar or from none.

The explanation given by Virchow, by Billroth, or by any of the pathologists of the prebacterial period, of the process of suppuration, now forms an interesting, though somewhat melancholy part of the history of science. We can but regret the careful attention to minute details, the elaborate observations, the painstaking researches that vainly sought the truth because the essential factor in suppuration had been overlooked. The parallel drawn by Virchow between the formation of embryonic blood vessels and of granulations—novel, original, and true as it was—only led him to the conclusion that the new tissue, in an effort to elaborate blood, produced pus as its nearest substitute for it. We all see the falsity of this conclusion, but to what other could one come who knew not the action of the bacteria on the leucocytes. Cellular pathology could go no further; biological pathology had to take up the strain.

Have we not approached the same stage in our study of the neoplasmata? Our text-books teem with the most minute accounts of the histological features of these growths as those of a century ago did with the similar features of tuberculosis. We divide and subdivide them into groups based on their histological features as our predecessors did with scrofula, miliary tuberculosis, lupus, and the many conditions that we now recognize as manifestations of the same general disorder. The parallel seems perfect.

Let us now examine the various reasons that have been given for the malignancy of the cancers. The first and earliest is "heterology," that the tissue is out of place. Granted that it is, what constitutes malignancy in that fact? Tissues are transplanted from one animal to another with more or less success, but though the transplanted tissue is then heterologous, it is not malignant. A fibroma in a breast is more heterologous than is a carcinoma, for the latter is epithelial, the very sort of tissue of which glands are composed, and were heterology the cause of malignancy, the prognosis would have to be reversed in these two cases. Every pathologist knows the difficulty of saying whether a given section is a harmless papilloma, or adenoma, or a malignant carcinoma, for each of the benign tumors has a malignant one that resembles it; and it appears that if malignancy depended on any histological element, a papilloma should be as dangerous as any epithelioma, an adenoma as menacing as an alveolar carcinoma.

It is true, as was mentioned above, that in some cases traumatism or constant irritation seem to be etiological factors, and heredity appears to exert some influence predisposing toward them, but we have learned from tuberculosis that these may be more apparent than real. A child born of tuberculous parents has its power of resistance diminished, and will succumb to an infection that one not so handicapped would

resist, or if some part of its body, as a bone, receives an injury, trivial to all appearances, the bacilli may be able to effect a lodgment in the injured part, whereas they would be destroyed by perfectly healthy tissue. We are as yet too ignorant of the protective processes of the body to explain all of the possible effects of injuries, but, from the experience already gained, we have been forced to revise many of the views of but a few years since.

The next view is that advanced by one of the most able men of our century, and one that fascinates even the dullest imagination. It is Cohnheim's suggestion that they are due to unused remnants of the blastoderm. If this be accepted, the remarkable group of tumors called dermoid cysts or teratomata would seem to be allied with them, whether they be fœtal enclosures or abnormal developments from the germinal epithelium, for the only reason that malignancy can be ascribed to epithelial structures developed from an excess of the epiblast is that they are redundant and useless, and this can be said with equal force of the dermoids.

To sum up the present status of the question, we find that the claim is advanced that the "cancers" are malignant because—

(1) They are unlike the tissues in which they lie. Obviously this is not the case, for the benign tumors are often unlike the tissues in which they lie; and, on the other hand, malignant growths are frequently developed in tissues that correspond histologically with themselves.

(2) They spring from embryonic remains. This is a pure hypothesis, capable neither of confirmation nor disproof; but granting the fact to be true, malignancy is not thereby explained.

(3) The new tissue is of a low grade of vitality, and its cells, singly or in clusters, undergo necrosis. These cells, or cell clusters, are then carried elsewhere, and so set up metastatic growths.

This explanation is worthy of study—the more so as it is accepted almost universally as pointing out the method by which these growths are disseminated through the body, or spring up anew after removal, but investigation shows its insufficiency. In the first place, it necessitates a belief in some peculiarity in the cells of the carcinomata that enables them to proliferate in the new site to which they may be transported, and this peculiarity is not known to exist. We cannot assume that epithelial cells have properties when composing a carcinoma that they do not have when in a normal structure, or at least such an assumption violates the usual rule of scientific deduction. Our hypothesis must fit the facts; facts must not be assumed to fit the hypothesis, and in this particular case the assumption is violent. If coagulation necrosis be found, say in a lymph gland, it is supposable that bits of the necrosed tissue bearing living cells may be borne away in the lymph current; but, so far as the writer is aware, no metastasis occurs, no new lymph gland arises in consequence. If infective materials, masses of cells bearing bacteria with them, be thus taken up and carried to distant localities, then metastatic abscesses result, but they are due to the bacteria, not to the cells. In prebacterial days just such a claim was put forth to explain the extension of a tubercular process, but to-day we ridicule such pathology as applied to tuberculosis, though we adopt it for the carcinomata.

Another obstacle to this view is that many of the benign neoplasmata, at times, attain great size, and when they do so, they too begin to soften and disintegrate as do the carcinomata. Presumably in such cases, emboli are carried from the seat of softening, but no metastatic growths are set up thereby.

To what then is malignancy to be ascribed? In our present knowledge, this question is difficult to answer, but, from analogy, it is, perhaps, not far amiss to say infection, or, in other words, to describe malignant tumors as local manifestations of some general condition. The nature of this condition and the histogenesis of the tumors are problems yet to be solved, but this view covers all the phenomena, and it is the only one that in doing so, does not involve us in a maze of undemonstrable hypotheses.

The objections to this hypothesis are more apparent than real, and to show their weakness it is but necessary to review them. The chief ones are—

(1) No micro-organism has been shown to be constantly present.

(2) Culture tubes inoculated from them remain sterile in many if not all cases; and

(3) Inoculations made on lower animals are inconclusive.

The first may be dismissed in few words. But little is yet known of the re-actions of the micro-organisms with coloring agents, and the little we know but renders the darkness visible, and shows how much remains to be cleared up. Men of great experience will fail time and again to demonstrate tubercle bacilli in tissues where there is every reason to suspect their presence, but, although the tubercular

staining methods are the most familiar of all, failure often follows their use. Several bacteria require special treatment to make them take the color, and it may be that the organism or organisms responsible for malignant growths are peculiarly resistant. Again, we do not know the class to which it may belong. It need not be a bacterium, but may be any of the protozoa such as the sarcosporidium, the myxosporidium, the microsporidium, and the like. At present, many observers incline to the belief that the coccidia are the pathogenic agents, but the present writer has not found them uniformly, and inclines to the belief that their presence is accidental.

The second and third objections are essentially the same, and may be considered together. In the first place, as stated above, there are two ways in which new growths are formed; one, as in tuberculosis, by an attempt to encapsulate the infecting material and thus limit its spread, or to overwhelm it by an army of leucocytes; the other, as in the formation of syphilitic gumma, by some unknown action of the disease. In the first, if phagycytosis is complete, the micro-organisms are devoured, destroyed, gotten rid of in some manner, and the new growth is sterile. Any one who has performed many autopsies must have seen healed tubercular spots showing points where the process had begun and then been arrested, and these scars are sterile, but the second class of formation is more to the point. After a case of syphilis has gone on for a long time, and all of the earlier manifestations, it may be, have disappeared, one or more deposits of this peculiar nature are laid down in parts of the body having no particular connection with the seat of the initial lesion. Why these gummata should be formed at all, what part they play in the economy of nature as affected by syphilis, what the source of the small round cells of which they are composed—all of these are unknown, yet we recognize the fact that the gumma is but the manifestation of the disease and not a disease itself. The most careful study of a gumma would give but small clue to its etiology were its connection with syphilis ignored, nor does the fact that a gumma is not transmissible militate against the contagiousness of syphilis. There is every reason to think that syphilis is of micro-biotic origin, yet its specific cause has not been demonstrated satisfactorily, and the failure of inoculations on lower animals is held merely to show that they are not fitted to be abiding places for the organisms rather than as showing that the organisms do not exist. He would indeed be unworthy of attention who would argue that syphilis was not contagious because experiments on rabbits had failed.

Do we not find a parallel to the gumma in the cancers? If a gumma be removed, we find a recurrence either on the old site or elsewhere, because it is but a symptom of a depraved state of the body as a whole. A patient having a gumma becomes badly nourished and cachexic, not on account of the little tumor, but because of the syphilis that produced the neoplasm. In the other case, the patient falls into the same state, and it is claimed that a little mass of epithelium cells is to blame. Is this more reasonable than to claim that the dyscrasia of syphilis is due to the small round cells forming the gumma?

Heredity, traumatism, and the whole list of "causes," all point the same way, to a weakening of vital resistance, and so far as we can say at present, the malignant factor in tumors is some general diseased condition, of which the tumor is but a symptom.

THE VARIOUS DISCHARGES OF THE MALE URETHRA

By M. D. HOGE, Jr., M. D., Richmond, Va.,

Professor Pathology and Urinology, University College of Medicine, Pathologist to Virginia Hospital, etc.

To classify all discharges from the urethra into specific and non-specific urethrites, is simply a confession of ignorance of the physiologic functions of the generative organs, and a lack of proper appliances for diagnostic purposes.

In the first place, we must recognize that the mucous membrane and urethral glands secrete a normal product, which is clear and of a sticky consistence, resembling egg-albumen. This secretion is from the glands of Littré and Cowper. Microscopically, it consists of mucous threads, a few pale epithelial cells, and leucocytes.

This is a normal condition and perfectly harmless, and should not be treated.

If the discharge is of a white milky character, or yellow, or green, and contains pus-cells, then we have an inflammatory process to deal with.

The presence of Neisser's gonococcus, while not fully accepted by all the profession as a perfectly sure diagnostic symptom, is still regarded by the majority as pathognomonic of gonorrhœa.

The method of staining the diplococcus is simple, and requires very little time. A thin layer of the secretion is smeared on the cover glass, flamed two or three times, then a few drops of a concentrated solution of methylen-blue is left on for half a minute, washed in water, dried, and mounted in balsam. The diplococci are stained an intense blue and the other cellular elements a fainter blue. The cocci are found sometimes in the pus-cells, more often between them, and rarely on the epithelial cells. The presence of losinophiloces cells, mononuclear and polynuclear leucocytes are without any special diagnostic value.

The secretion from the prostate consists of a thin blue-gray or yellowish fluid, which is sticky and can be drawn out in long threds.

Microscopically, we find the milky color due to the presence of a quantity of very fine fatty granules, according to Türbringer composed of lecithin. Further, columnar epithelium, large cells in various degrees of fatty degeneration; sometimes round concentric amyloid bodies—prostate concretions—which give the iodine reaction.

By adding a one per cent. solution of phosphate of ammonia, and drying slowly in the air, the Charcot-Leyden crystals are readily obtained.

As to the causes of spermatorrhœa, we find a diseased condition of the ejaculatory duct; chronic constipation with straining at stool; involuntary emissions and masturbation.

Microscopically, we find a whitish jelly-like fluid, in which are the Bence-Jones cylinders and the spermatozoa; these last are the most important from a diagnostic standpoint. In a fresh condition, they show active movement, and possess a head, body and tail.

In man, the head is 3 to 5 m. long and 2 to 3 m. broad. The tail shows a delicate filament, extending from end to end, called the axial fibre, which, with the body, is from 50 to 79 m. long Motion may be observed from twenty-four to forty-eight hours after discharge from the body.

Spermatorrhœa is fortunately not a very common condition. It is more often confounded with prostatorrhœa, and a careful distinction between the two should be made in order that the patient's alarms and fears may be set at rest.

When spermatorrhœa does really exist, attention should be paid to secure soft easy evacuations, which is readily done by taking every night at bedtime a piece of gum aloes about the size of half a coffee grain. As a tonic, bichlorid of mercury in $\frac{1}{48}$th gr. doses three times daily, in gentian or elixir calasaya, will prove of great value.

No. 7 North Third Street.

VAGINALATRESIA — REPORT OF CASES.*

By JUNIUS F. LYNCH, M. D., Norfolk, Va.

I know nothing in the way of deformities that causes more suffering, both mental and physical, to those who are unfortunate enough to be so afflicted than atresia of the vagina, whether it be congenital or acquired.

My experience in the treatment of this class of cases has been limited, and the literature on the subject is meagre, so I hope that a full and free discussion to-night will bring out the results obtained by other gentlemen present in their operative work for the cure or alleviation of this deformity.

Dr. Lee, of Chicago, in a recent article, has very thoroughly traced the development of this malformation from early uterine life, and has cited the theories of various authors on the subject, but as "it is a condition and not a theory that confronts us," I shall not take up your time by going into these details. Suffice it to say that this condition may be either congenital or acquired.

Congenital atresia is rare; is due to faulty development, and is, when complete, always associated with an infantile uterus or an entire absence of this organ. In this form of atresia we may have complete obliteration of the canal, or the atresia may be confined to some portion of it.

In *acquired atresia*, childbirth and trauma are important factors; anything, however, that may give rise to inflammation or sloughing of the vaginal mucous membrane may produce this condition.

Dr. Dunning, of Indianapolis, has reported a very interesting case of acquired atresia following childbirth, in which there was not only a complete obliteration of the vagina, but also of the uterine cavity. I can find no record of a similar case. In the vast majority of these cases the deformity is not discovered until puberty or shortly after marriage; and even then, unless urged by the suffering incident to retained menses, etc., or by the importunities of the husband, delay in seeking the advice of a physician is the rule.

The diagnosis is generally made without dif-

* Read at a meeting of the Norfolk Medical Society, April 1, 1897.

ficulty, if an examination is permitted; an attempt to make a digital examination of the vagina will reveal the absence of this canal or the presence of an obstruction, and recto-abdominal palpation or conjoined palpation of the rectum and bladder by means of a sound in the latter organ will indicate the presence of a hæmatametra or a hæmatokolpos.

The treatment is, of course, surgical, but nothing can be gained by operating before puberty, for prior to this time the operation is particularly tedious, difficult and unsatisfactory, and the chances are that before menstruation begins a second operation will be necessary; nor should the operation be delayed until danger of rupture of the uterus or tubes from over-distention by the accumulated products of menstruation is imminent.

In operating we have two dangers to contend with, namely, rupture of the tubes and sepsis. Dr. Lee, in the article already referred to, says, "rupture of the tubes has been repeatedly observed following drainage of a hæmatokolpos, the time varying from four hours to ten days after the operation; all of the cases terminated fatally, either immediately from shock, or subsequently from peritonitis."

When hæmato-salpinx exists and the tubes are dilated until the walls are thin and rupture is apt to occur, draining the tubes, either by a laparotomy or by puncture per rectum has been advised before further operative procedure. In these days of surgical perfection, with strict attention to antisepsis and asepsis, I do not think the dangers from sepsis are as great as some of the authorities I have referred to would have us believe. When the atresia is due to an imperforate hymen a crucial incision of this membrane is all that is necessary, but when we have a mass of connective or cicatricial tissue interposed between the introitus vaginæ and the cervix uteri very careful dissection is called for, and we have an operation that is delicate, difficult and dangerous on account of the close proximity of the bladder and rectum.

When a hæmatokolpos exists drainage of its sirupy, glue-like contents is necessary, and I believe that this can be better accomplished by a free incision, with subsequent packing with iodoform gauze, than by aspiration per rectum or per vagina. We occasionally see a case of congenital atresia in a woman who has married, and whose object in seeking relief is sexual intercourse, these mistaken and pitiable marriages are always the result of ignorance, and every surgeon who has had an experience with such a case has learned how difficult it is to form and maintain a vagina of sufficient size and depth to permit of coition. Not infrequently where the utmost skill and care are exercised patulency of the vagina is maintained with the greatest difficulty, and our efforts in this direction are generally futile. There is always a strong tendency for healing to take place from above downwards, and after cicatrization occurs, there is a still stronger tendency for contraction to occur. In order to overcome this, various devices have been suggested and used—rubber and metallic bougies, sponge tents and the glass plug suggested by Sims—these have all "been weighed and found wanting," and nothing but disappointment has resulted from their use.

Transplantation of skin and mucuous membrane has also been tried, but the results obtained have not been encouraging. In one of the cases, which I report to-night, I used electricity with good results, and the results obtained in the electrolytic treatment of urethral stricture lead me to believe that its efficacy in preventing contraction after an operation for vaginal atresia will be proven by a more extended trial.

I desire to report the following cases:

Case I. An ignorant, uneducated woman of 30 and married seven years, applied to me for treatment and gave the following history: She had never menstruated, though irregularly for a few days each month she complained of pain in her back and thighs and a feeling of lassitude; otherwise she was an exceptionally healthy woman, and did her own cooking, washing and ironing.

She stated that when she married she was ignorant of the fact that she was not like other women, and had attributed the absence of menstruation to "female complaint," which she thought would probably be benefitted by marriage. It was not very long after the marriage before she realized that there was something radically wrong, and after seven years of urging and solicitation on the part of her husband she finally consented to submit to an examination, and, if necessary, to undergo the ordeal of an operation.

An examination revealed a normal rectum and urethra; the external organs of generation were small and presented the appearance of those of a woman who had passed the menopause. There was an entire absence of the vagina; there was simply a depression, a cul-de-sac, covered with skin continuous with that of the perineum, and probably a quarter of an inch in depth. Recto-abdominal palpation did not reveal the presence of a uterus, nor did I have any better success in locating this organ by recto-vesical palpation.

The uncertainty of the operation as to a cure was explained to the patient and her husband, but they desired to have it performed, and a week later she was placed on the operating table. With one assistant holding a sound in the bladder and another with a finger in the rectum, I carefully dissected between these two organs to the depth of two inches and located an infantile uterus. The difficulty of keeping the incision open presented itself; it was packed for the first three or four days with iodoform gauze, and then not having Sims' glass plug I substituted a very large test tube, this answered the purpose very well, and in three weeks the patient was discharged with a fairly good made-to-order vagina.

I saw nothing more of her for a year, when she returned to me and stated that she had "grown together again," and that she desired to have another operation performed. An examination showed a vagina probably an inch in depth, with this exception there was complete closure of the incision I had made a year before. I hesitated to operate on this woman a second time, but she and her husband insisted so strongly that I consented to do the best I could for them. The second operation was not so tedious as the first, and the same method of keeping the canal open was adopted. She made an uneventful recovery and was discharged in a month. Four months after this I saw the husband of my patient, and he told me that while sexual intercourse was possible it was painful and unsatisfactory; since then I have lost sight of the case, but I am satisfied that long ere this she has "grown together again."

The interesting points to me in this case are: 1st. The pains in her back and thighs and the general malaise with which the patient suffered for a few days every month, symptoms, which taken together with the regularity with which they occurred, would indicate some functional activity of the uterus, though the operation revealed an infantile womb. 2nd. The fact that the patient had been married seven years before any effort was made to have this defect corrected or before any advice on the subject was sought by either her husband or herself.

Case II. A frail delicate young lady of seventeen was brought to me by her mother with a history as follows: Had never menstruated, though each month for several days she suffered the most excruciating pain, which subsided gradually and left her very much prostrated. Had been in poor health since childhood, and was generally more or less irritable; she shunned the society of other girls of her age, and was at times very despondent. Thinking that this was probably a case of delayed menstruation, she was treated palliatively with tonics and anodynes for several months, but as she failed to improve under this treatment, I suggested an examination, to which she, after much persuasion, consented. The abdomen was found somewhat enlarged and tender on pressure in the hypogastric region; the rectum was very much encroached upon by what I regarded as, and what subsequently proved to be, a mass of retained menstrual blood; the labia, both majora and minora, were small and poorly developed. Upon attempting a digital examination of the vagina I found it impossible to introduce my finger more than an inch, and a small vaginal speculum showed that the vagina apparently terminated about an inch from the vaginal orifice.

The condition and necessity for an operation were explained to the patient's mother, and both she and her daughter agreed to allow me to operate. After some preparatory treatment she was operated on at her home. The dissection was made slowly and carefully, and after progressing for, I suppose, an inch beyond the point at which the vagina originally terminated, I detected a distinct sense of fluctuation, and in a very few minutes the retained menstrual blood began to ooze into the wound; the incision was extended so as to secure more effective drainage and the vagina was irrigated with a two per cent. solution of creolin. The uterus was found very much enlarged and distended with the retained menstrual blood, and the last time I saw the patient this organ had not regained its normal size. The oozing continued for nearly two weeks, and as long as it lasted, daily irrigations with two per cent. creolin solution were used in the vagina and uterus.

In order to prevent contraction in this case, I used iodoform gauze packing as long as the menstrual blood discharged and then inserted a small test-tube.

The test-tube was used at intervals for two months, but proved unsatisfactory, and I began the use of electricity three times a week. The negative pole was placed in the vagina, and the positive pole over the abdomen; the current used was never stronger than 10 or 15 milliampères, and the result obtained was all that could be desired. The patient made a complete recovery, became strong and healthy, and the last I heard of her she was engaged to be married, so I can safely infer that no contraction has occurred.

Columbia Bl'dg, Granby Street.

THE LIFE-WORK OF THE PHYSICIAN *

By CHAS. P. McNABB, M. D., Knoxville, Tenn.,

Professor of Theory and Practice and Clinical Medicine Tennessee Medical College, etc.

When Hippocrates, the Father of Medicine, sent forth his students to practice the art of healing the sick, he gave to each a charge in the form of an oath, setting forth certain rules of conduct, which were to be their guide through life; and, following his example, medical colleges make it a part of their commencement exercises to have some member of their faculty deliver a short address known as the "Faculty Charge to the Graduates."

This pleasant duty has been assigned to me on this occasion by my esteemed colleagues, and I shall therefore offer a few suggestions which may be of future service to you, if not of present interest.

We will divide the profession of medicine into two classes: competent and incompetent physicians, whose paths lie in widely different directions. If you have not already done so, let me suggest that you make up your mind at once as to which class you will belong, and I will try to tell you how you can attain your ambition.

The *incompetent physician* soon learns "ways that are dark and tricks that are vain," and almost always resorts to methods to obtain practice which are looked upon with contempt by the better element of the profession. Thus he seeks to attract attention to himself on all occasions, and fishes for patronage with a zeal worthy of a better cause. He joins the most popular church, regardless of cost, and usually takes an active part in the Sabbath-school and all other church societies; and for this I have always felt inclined to give him credit—hypocrite though he be—for I know of no other man who needs the prayers of a Christian people more than an ignorant doctor, unless it be his unfortunate patients. He joins all secret organizations that he can get into, hoping to gain some advantage through his Lodge associations. He becomes an active worker in the dominant political party, and grabs at every medico-political office or salaried position that comes within his reach. He fits up an elegant office, and buys the best team and rig he can get on credit, and often his over-trusting creditors have to wait a long time before they get their money. He rushes about as if he were doing a land-office business, usually driving on the most fashionable streets, going out on one and in on another several times a day; and when, at last, he is called to an accident case, or one in a well-known family, it always happens that a newspaper reporter gets the item, and never fails to mention that doctor so-and-so has charge of the case. By such signs as these, and others too tedious to mention, such a doctor is recognized the world over; and while he may, for a time, float on the crest of the wave, he sinks sooner or later, for in medicine as in all things else, right will prevail, and merit finally receives its reward.

On the other hand, *a competent physician* is one who is educated in the science and art of medicine and skillful in its application; whose judgment is so accurately balanced that in case of doubt he intuitively chooses the right course. He is a man whose presence in the sick room brings hope and ease, and sometimes life and health to the weary sufferer. He is so well acquainted with the language of disease that he reads correctly from the signs and symptoms the pathology within, and knows what measures are best calculated to relieve the parts affected. With a touch as gentle as a woman's, or a grasp as firm as a vice, he ligates the bleeding vessel, adjusts a fracture, or reduces a dislocation. With a sympathy as true as a sister's, he soothes the nervous and irritable patient, or with a command stern as a Commodore's, he subdues the contrary and perverse one. From knowledge born of experience, he gently re-assures the needlessly frightened one, and, with a dignity equal to a potentate, he quits the insolent one. He brings order out of chaos; is cool and self-possessed where dangers are thickest; he is not frightened out of his senses when death hangs like a pall around the scene, and, when "life's fitful fever is almost o'er," he makes easier the dying pillow, and often procures a priceless euthanasia for the helpless one.

Would you be such? If so, the path before you is not strewn with flowers, but it is well beaten; and in treading it you need not necessarily wear a "crown of thorns."

In the broad domain of progressive medicine there is not even standing room for a lazy man; therefore *industry* is the corner-stone of professional success; and next is *method*, without which much of the fruits of industry are wasted. An earnest desire to *know the causes of disease*, the changes wrought by them in the organs of the body, the signs and symptoms they produce, and the remedies and measures that will relieve them, make the next stone; and at last

* Being the "Faculty Charge to the Graduates" of the Tennessee Medical College, Knoxville, Tenn., Eighth Annual Exercises at Staub Theatre, March 19, 1897.

self-denial, coupled *with a strong determination to succeed*, is the cap-stone of the pile.

There is an old medical adage, which says, that if you "keep your office well it will keep you." You should therefore be found at your office at all hours when not necessarily absent, and when called away, return as soon as convenient, that you may be found easily by the next person who desires your services; and when you are called to a case of illness, go at the earliest opportunity or decline the case at once; and I advise you to accept all calls for the first few years, or until you have gained experience and reputation, after which you should never refuse a worthy object of charity without an excuse that will clear your conscience for all time. Be methodical and thorough in your examinations; note every symptom, and group them in your mind as they relate to certain diseases, or organs, when it is much easier to make logical deductions from them. Take ample time to make an examination; if you allow yourself to be rushed or hurried, you will overlook important data, which, if they were taken into the reckoning, would alter the aspect of the case entirely.

Set apart an hour or two of each day for concentrated study of some important medical subject, and confine your mind to it until you have learned all that is known about it before you take up another; and, while studying, forget everything but the page before you, and you will be astonished at the facility with which you accomplish your task. Review the symptomatology of disease frequently; the language of disease is a tongue and requires much cultivation to keep it in mind. Indeed, you may well adopt for a motto a couplet from a sweet old song:

> "Tell me the story often,
> For I forget so soon."

Read first-class medical journals, for it is only in such that reliable current information is obtained; and by studying the reports of cases and other addresses of the men who form the vanguard of the medical profession you will become inspired with some of their knowledge, and thus become learned and skillful yourselves.

Keep a careful and accurate record of all important cases that come into your hands. It will make you observe symptoms more closely, and such records are an invaluable storehouse of information to you, when in after years you are writing some subject for publication. Do not report cases or write communications for publication until you have something of interest to report; then by all means let us hear from you, but *do not send your contributions to cheap medical journals.* It is too much like "casting pearls before swine;" and if the paper is not worth a place in a first-class magazine, it is not worth reading.

The field of gross pathology is well tilled, but that of bacteriology is broad and far-reaching, even to the borders of the infinite. In it the harvest is ready and the gleaners are many, but it invites you all, and will furnish employment to your minds for a long life time. and there will always be room for others.

Buy a good microscope as soon as you can do so, and make as many bacteriological examinations as possible. Prepare cultures from the lesions of the diseases you treat, and with them inocculate some vulnerable animal, and by watching the development course and results of such experiments, you gain a definite knowledge of the life history of the bacteria in the tissue, and thus is obtained the key to the management of such diseases in the human race. To take a harmless and helpless little animal and thrust into its tissues a hypodermic needle, charged with a virulent septic poison, condemns it to a battle royal with death, and if it comes out victorious, it must suffer much pain and probably be killed by the experimenter, that the results of his investigation may be verified *post mortem.*

Accuse me of womanish sentimentality if you choose, but I confess that under such circumstances the question will arise: Is this entirely justifiable? Does not this animal fill its place in its own sphere as well as I fill mine? And has it not the same right to its life that I have to mine? Then methinks I hear rolling down, through the dim vista of the long gone centuries, a voice from Sinai's sacred heights in thunder tones proclaiming: *Thou shalt not kill.*

But I also hear King David say: "What is man that thou art mindful of him? and the son of man that thou visitest him. For thou hast made him a little lower than the angels and hast crowned him with glory and honor. Thou madest him to have dominion over the works of thy hands; thou hast put all things under his feet. All sheep and oxen, and yea, the beasts of the field; the fowl of the air and the fish of the sea." Since we were given dominion over all living things, they must have been created for our benefit, and as we kill them without compunction for food, it seems to me that we are fully justified in sacrificing them on the altar of research, to the end that the bodies of our immortal race be rescued from disease and death, until the allotted span of three-score

years and ten have rolled away. And if not one sparrow fall He wot not of, how immeasurably great is the consequence when a human life goes out!

To my mind these arguments all point to the great fact that every one posing as a physician, and attempting to treat the sick, takes upon his or her shoulders a grave responsibility, which can only be met by being thoroughly equipped to meet the dangers and manage the difficulties of practical medicine; and this means a lifetime devoted to its study, and that social pleasures, personal conveniences or business opportunities that offers the most flattering prospects for large returns must be brushed aside, and even the physician's health and life must be sacrificed if professional duties demand it. While you cannot engage in outside business without neglecting your profession, or the business, you can and should pay strict attention to the business side of your profession. Keep your books correctly posted, and make out your bills régularly at short intervals; it is easier for a patient to pay a small bill than a large one, and by such a course you will retain his patronage longer and your bank account will be more satisfactory. I can assure you from personal experience that mixing your business affairs and personal friendships nearly always results disastrously to both. Persons who get the most from you for nothing are the ones who hold you in least esteem and will hesitate not to injure your reputation when you give them the smallest excuse for doing so.

Assume no financial obligations that you would not be able to pay dead or alive, and when you promise to pay money, let no personal inconvenience or honorable sacrifice prevent you from complying with it.

You may have concluded from the foregoing remarks that the strait and narrow path of honorable medicine is not an alluring promenade, but there are shady nooks, and fruits, and flowers, and music, and poetry along the way if we have the discriminating power to recognize them.

You will not gain wealth through the practice of medicine, nor will it bring you political honors, but it will yield you a comfortable living, and if you are economical you may save a nice little sum as the years go by; but if you save nothing but a reputation, such as Ian McLaren has painted in Weellum McClure, and know that you have discharged your duty to your profession and your fellow man, you will not have lived in vain, even though you die in poverty, and your last resting place be like the grave of Moses, far away on some lonely mountain side unknown to mortal man.

It must be a source of great satisfaction to reach down from the heights of medical skill and grasp the helpless hand imploringly extended from the depths of disease and pain, and lift the wan sufferer back to ease and health and joy, and thus disperse the cloud that hangs so darkly around the home These are comforting reflections, but where are the poems, painting and music to be found? Not in the city's smoky depths, nor in the laboratory's narrow confines, but imagine a call to the country on some balmy night when—

> The world is hushed in slumber
> Like seas grown still with night.

We will see the stars when each one looks like a diamond set in yon cerulean curtain that shuts out our view from the throne of God, and the happy harvest moon, setting like a vestal virgin, shedding softest rays of pallid light over hill and vale, converting the little pools of water into miniature silver lakes, smiling back the beauty of the starry vault that bends above us. We see the wild flowers in their first blush of the morning, kissed by the dew drops and freshened by a touch of Æolas as he leaps from hill to hill. There is beauty in the budding plant, the waving corn, the ripening grain, the golden sheaves and the autumn painted leaves, and there is inspiration in the aroma of the woodlands. There is music in the tinkling bells of the lazy cows and the barking of the faithful watch-dog in the distance. The mocking bird sings never so sweetly as when, free as the wind, he carols his lay in the night time. There is symphony in the dismal hoot of the great horned owl, and the scream of the nighthawk on their errands of prey. There is consonance in the shrill notes of the proud emblems of democracy as they announce the coming of another day. Ofttimes the chimes of the distant town clocks are borne across hill and dell to our enchanted ears in pianissimo cadences, soft and low as the sad sweet tones of an alto horn. There is music in the rippling brook and falling nuts, and we sing of "The Old Oaken Bucket," when we pass by a well. Nature is all harmonious and divinely beautiful, and our life work is so constantly in touch with her laws, her penalties and her rewards, that we become broadly optimistic and believe, ah, we know, that a very large per cent. of mankind are only lower than the angels, because they are wrapped in the mantle of mortality.

Gentlemen, the hour has come when our relations as pupils and teachers must cease. And now, in behalf of the faculty of Tennessee Medical College, I bid you Godspeed and an affectionate farewell.

THE THERAPY OF PHTHISIS.*

By PRESLEY C. HUNT, M. D., Washington, D. C,

For fear the title of this paper may mislead to the expectation of a dissertation on the thousand and one remedies that have been vaunted as specifics in this scourge, I hasten to assure you that while an apology seems almost necessary in choosing such a subject, I cannot resist presenting the methods I use, not on account of originality, but with the hope that the discussion of this subject may be of value.

This is the day of new ideas and remedies. The old, well-tried drugs of our fathers have been consigned to oblivion, and many hasten to manufacture a solution or to be among its earliest advocates.

While serum therapy has become the recognized treatment in many acute diseases, and while it might be of benefit in the earliest stage of this disease, it has not met with the success that many had hoped. In fact, the antitoxic property of human serum in a patient affected with phthisis, is not sufficient to prevent the occurrence of tuberculosis of the intestines when the sputum is swallowed.

The first great step in the rationale of the therapy of phthisis was made when Koch discovered the specific cause of the disease.

This led to prophylaxis, and if rigidly enforced, as we hope it will be, would soon lower the number of cases of lesions of tubercular nature from 50 to 60 per cent. of all people dying to a minimum.

The cardinal points of prophylaxis are disinfection of sputum, clothing, furniture, room, etc.; examination of food and drink, exclusion of patients from occupation that make the presence of the disease dangerous to others.

I must here protest against the prevailing idea that because a mother or father has the disease the children are doomed.

If the same care in prophylaxis is carried out as above, especially if the children have dry, sunny rooms to live in, with plenty of good milk and fresh air, there is no reason to doubt that they will grow up strong and healthy.

A large proportion of cases are cured spontaneously without treatment; many recover from change of climate, combined with judicious use of drugs; but how many are lost through failure to detect the disease in its early stage?

I therefore strongly emphasize the fact that it is only by an early diagnosis that we may hope to accomplish a cure.

In a number of cases, about twenty, in which tubercular was used, no good results were observed except in one case of tuberculosis of the bone.

Tuberculin should be used in small doses when there is little or no septic condition present.

It is, therefore, most useful in incipient cases or latent tuberculosis of bone or gland. It has been suggested that tuberculin be used as a means of diagnosis in suspected cases of human tuberculosis. It was used in this manner at the Womans' Hospital, D. C., in 1892.

One of the most widely used, and in many cases most beneficial remedy, is creasote. In a very complete essay by Dr. Johnson Eliot before this Society a few months ago, its action in phthisis was dealt with at length, and, therefore, my remarks will be as limited as possible regarding this drug.

It is an expectorant, stomachic and general tonic; checks excessive secretion. It has no especial action on the pus-producing organisms, and, therefore, has no direct action on the fever. It seems to have no appreciable effect on the tubercle bacilli in the body, although the body may be saturated with the drug.

It is contra-indicated when it interferes with the appetite, or when diarrhœa, disease of the kidneys or hæmoptysis is present.

The dose is governed by the toleration exhibited by the patient.

I have been unable to give over half a drachm daily, and as a rule much less, but have always obtained good results from this comparatively small dosage in the first stage of the disease.

In a case that consulted me in September, 1896, the apices of both lungs were affected, was placed on five minims of creasote (Morson) three times a day, and he now seems to be in better health than before he was affected. Ichthyol has its advocates, but I found it of less value and more disagreeable than creasote.

Strychnine in large doses of from gr. $\frac{1}{40}$ to gr. $\frac{1}{20}$ four times a day, I find most beneficial, especially in the second stage of the disease or where there is mixed infection.

It is a general tonic, raises the tissues of the body to the highest degree of resistance, and in the earlier stages causes the disappearance of the tubercle bacilli and cough, and in the last stage greatly modifies these symptoms.

The best results I have obtained from strychnine was in the following case:

* Read at a meeting of the Medical and Surgical Society of the District of Columbia, April 1, 1897.

M., female, aged 42; family history, tuberculosis; consulted me in April, 1896. History of several hæmorrhages, loss of weight about fifteen pounds, sweats, fever, etc.

Physical examination revealed apices of both lungs affected.

Examination of sputum showed it loaded with streptococci, staphylococci, and tubercle bacilli.

Strychnine sulphate gr. $\frac{1}{40}$ four times a day, noticed steady improvement in all symptoms, and about first of March, 1897, had gained in weight, and at present is several pounds heavier than normal; no cough or expectoration; lungs nearly normal.

The result in this case was a great surprise to me, as I had given a most unfavorable prognosis.

I could report other cases, but not in one could the favorable effects of strychnine be better shown.

I have used arsenic in a very few cases, and found it valuable as a stimulant for the appetite and assimilation, causing an increase in body weight.

Hypophosphites are used to supply the deficiency that occurs in phthisis, but the same results may be obtained from milk, which is rich in hypophosphites.

The most useful remedy for cough is opium. The great disadvantage to its very general use is the liability of creating the opium-habit. It also dries up the secretions and ruins the appetite.

The very troublesome cough at night may be controlled by chloral hydrate in ten-grain doses with or without bromide of potassium. Small doses of undiluted whiskey or brandy will act as a sedative.

Inhalations of medicated steam are specially useful when the mucus is tenacious.

In hæmoptysis, absolute rest in reclining position is the best possible treatment. I have used with success ten grains of sulphate of quinine every four hours when the fever was present.

Tablets containing morphine sulph. gr. $\frac{1}{8}$, atropine gr. $\frac{1}{150}$, every four hours when cough is excessive, have been used with success. I have gained no good results from ergot.

In case of excessive hæmorrhage, binding of the extremities should be practiced.

In night sweats, hypodermic injections of sulphate of strychnine gr. $\frac{1}{30}$, or extract of belladonnæ, aromatic sulphuric acid and agaricin, may be used.

Constipation is one of the most frequent complications in the earlier stages of the disease. The milder the laxative the better; and with care and judgment, the diet may be so arranged that a glass of mineral water will be all that is necessary.

The triturate of aloin, belladonnæ and podophyllin at night, I find most useful.

Diarrhœa occurs late in the disease, and indicates that the intestines have become affected. Milk diet is indicated, but among the remedial agents, bismuth subnitrate in ten to twenty grain doses holds the first place with or without five grains of salol every three hours.

Beta-naphthol and bismuth subgallate may be used.

Pain may be relieved by turpentine stupes, belladonnæ plasters, small doses of phenacetine or morphine.

The great importance of alimentation cannot be overestimated in the therapeutics of phthisis. The principal guide to the progress of the disease is the loss of weight, and it must be our endeavor to counteract this by all possible known means.

Milk, the most easily obtained food, is by far the best when pure. It may be taken fresh, or if preferred, sour, with a little lime water, in diarrhœa, or in seltzer water if constipation exists. To disguise its taste, alcohol may be added in the form of whiskey, cognac or rum. It may be taken in large quantities, and with a little judgment, any danger of its becoming unpalatable, may be reduced to a minimum. Alcohol is the food of the highest force and requires no digestion, passes into the blood, and becomes immediately oxydized. It is the most valuable remedy we have in reducing the fever of this disease. Good, strong red wines, combined occasionally with cognac, are the best forms of administering alcohol. It is contra-indicated in hæmoptysis.

Cod-liver oil stands next to alcohol in force value. It should be given in small doses, one or two teaspoonfuls four times a day—the quantity being regulated by its digestibility. It is contra-indicated in fever or when dyspepsia is present, in which case glycerine may be used.

Meats, eggs and fats should be used in increasing quantity over that used in health.

Salt should be used in large quantities, as there is considerable loss of this substance by the sputum and urine.

Flannel should be worn next to the skin, friction with alcohol in night sweats, and massage should be systematically practiced.

Cold douches are most useful if good reaction follows; if not, tepid water with vinegar is good to reduce fever.

Sunlight, sunbaths, open air exercise cannot be overestimated in the treatment. Even in bad weather it is better for the patient to be out, carefully protected from the elements.

The last remedial agent I desire to mention is among the most important, but is limited to those who are in the first stages of the disease, and from financial reasons, to the better class.

I refer to change of residence.

In this country the climate of Colorado, parts of New York, New Mexico, North and South Carolina, have won national reputation as resorts for consumptives. While the climate has much to do with the ultimate cure, we must not forget that at the sanitariums located at these various places, a system of feeding, massage, fresh air exercise and recreation is insisted on, which is of even greater importance than the climate.

I find that in this article much has been omitted, especially as to the treatment of the various complications likely to arise in the cause of the disease.

STONE IN THE BLADDER—A CLINICAL LECTURE.*

By HUNTER McGUIRE, M. D., LL. D., Richmond, Va.,

President. and Professor of Clinical Surgery, University College of Medicine, Richmond, Va.

[Reported by C. L. Moore, Class of 1896-7.]

Gentlemen,—The first case to which I call your attention this morning is one of stone in the bladder.

There are two forms of this trouble: *First*, where the stone is formed in the kidney, travels through the ureter, and lodges in the bladder. It may pass on through the urethra, and thus be voided, or it may lodge in the bladder and continue to increase in size.

The *second* form is due to local causes, where there is precipitation of salts or decomposition of urine.

The *first form* is due to constitutional causes, such as indigestion, or improper assimilation of food, seen in high livers, wine-drinkers, etc. Secondly, in patients suffering from gout, or from any trouble which causes an increased amount of uric acid, urates, phosphates, etc., to be contained in the watery elements of urine. These salts, which are deposited, may be of a pale buff or yellow color, a "brick dust" deposit, or a cayenne pepper color. They may be uric acid, oxalate of lime, or a combination of the two, ammonium in combination with salts of uric acid, and (rarely) cystine.

The *second form* is due to local causes.

First, *phimosis*, or tight prepuce, constricted meatus, strictures, enlarged prostate, or anything that obstructs the flow of urine, thereby favoring the deposit of the salts in the bladder.

Second, *foreign bodies* in the bladder, such as corn, seeds and hair-pins.

(Here is a stone I took from a woman which contains a hair-pin. The hair-pin getting into the bladder, formed a nucleus for the stone.)

Stone in the bladder is chiefly seen in males, and very curiously in the sons (10 to 15 years of age) of poor relations, or in rich old men from 55 to 75 years of age). It is rarely seen during the middle of life.

Women seldom have the trouble because, as a rule, they are not high livers, drink little wine, and also on account of the anatomical peculiarity of their urethra, it being shorter and larger and very distensile.

In boys and old men, the prostate is narrow and cannot pass the crystals formed.

Symptoms.—The *three cardinal symptoms* are: First, *pain*; second, *frequent micturition*; third, *hæmorrhage.*

Another symptom, very characteristic, is that the patient *milks his penis*, or grasps it tightly, to lessen the pain. Of course, the only positive sign is to feel the stone with a sound.

Pain is especially seen at the end of making water. The water coming in a tiny stream, the prepuce is stretched or ballooned. The stone may fall across the neck of the bladder, and suddenly shut off the stream, causing intense pain; or often all the urine has been expelled, and we see the straining and tenesmus of the bladder, also causing severe pain. This straining may be felt all over the body, and some patients, when they make ready to urinate, also prepare to have an action from the bowels.

A patient is much relieved by lying on his back while making water.

Driving or riding also causes intense pain.

Frequent micturition is caused by the bladder not being able to contain as much urine as it does ordinarily, and by the stone falling into the neck of the bladder and shutting off the stream.

Hæmorrhage is an inconstant sign, as it is not seen when the patient keeps still.

Cystitis may have some of these symptoms; so do not make a positive diagnosis *without finding the stone.* Incidentally, I will mention that the character of the water taken in or

* Delivered in the Amphitheatre of the Virginia Hospital November 14, 1896.

drunk, whether hard, soft, limestone water, etc., does not predispose to the formation of a stone.

Prognosis.—If the patient is let alone, he may carry the stone with impunity for a long time, but it will finally kill him by the appearance of ascending pyelo-nephritis, or some trouble due to this stone.

The danger of operating is that the patient may already have pyelo-nephritis, and then his death is certain. Sir Henry Thompson gave the name of "surgical kidney" to this trouble, and it is very seldom that you can diagnose it in the patient.

Treatment—Operation—In getting the patient ready for the operation, avoid exposure to cold. Wrap him in a blanket; use warm antiseptic solutions to cleanse him; then wash out the bladder with some antiseptic fluid, as Thiersch's solution (8 parts of boracic acid to 1 part of salicylic acid, water 1,000) or boracic acid solution. After cleansing the bladder, pump in some water. In the case of this boy I used only about four ounces, and constrict the penis to retain it there; then put into the rectum, far up, a rectal bag holding from eight to ten ounces; then pour in a measured amount of water to dilate the rectum, thus pushing the bladder forward. By this means I can more easily get at the triangular space of the bladder which is not covered by peritoneum. Instead of this bag, I could use a cotton ball or a sponge with a string attached to withdraw it.

Operation.—There are three operations that could be done: 1. *High operation* or *supra-pubic cystotomy;* 2. *Lateral operation;* 3. *Crushing the stone.* To-day I will do the *high operation.*

After the patient is thoroughly anæsthetized, make an incision in the middle line of the abdomen, just above the symphysis pubis; and here let me caution you never to get out of the middle line in this operation and to hug the symphysis, for by this means you miss the important blood vessels and nerves.

After carefully dissecting through the skin, fat, recti muscles and transversalis fascia, you come to the prevesical fat, which contains some rather large veins. After going through this you come to the wall of the bladder. Open it and remove the stone. Do not put in a drainage tube; but after taking a single stitch in the skin, place a large sponge over the incision to absorb the urine escaping. After tying it securely and bandaging, etc., put the patient to bed, after having greased the lower part of his abdomen with vaseline to prevent the urine from irritating the surface.

There is no special position for him to use in bed, but if he lies on his side, the urine may escape from the wound.

And, finally, let me caution you not to leave the rectal bag in the rectum after the operation, for the hemorrhage from the cut blood vessels will not cease until it is removed.

Proceedings of Societies, etc.

MEDICAL AND SURGICAL SOCIETY OF DISTRICT OF COLUMBIA.

Dr. Llewellyn Eliot, Recorder.

Dr. Hunt read a paper on

The Therapy of Phthisis. [See page 13.]

Discussion.

Dr. Vincent said cases of phthisis are generally seen by the doctor too late for satisfactory treatment. In the early stages of the disease, he has found benefit from cod-liver oil pushed to tolerance. He spoke of the beneficial effects of the climate of New Mexico. Of those cases who go to new climates, a majority die. With reference to the transfer of Indians from a high dry to a low damp climate, they speedily died of tuberculosis. The *strychnine treatment* is good at times; the nervous system is stimulated by strychnine at the expense of the general system. In sweats, he had used strychnine and atropine, but these sometimes fail. For the *diarrhœa*, opium is used, but he prefers any of the various tannates. In *recurring hæmoptysis*, purgatives have been found of benefit. For the *pain in the side*, he uses dry cups and mustard. Nothing stops *hectic fever.* At times, good results are obtained from creasote and guaiacol. General hygienic treatment after the first stage is all that can be of benefit, as cases are hopeless after this stage has passed.

Dr. Sohon had used protonuclein for the *hectic fever*, and it seems to have some influence on the cough.

Dr. Reyburn said the treatment of phthisis, to be successful, must be in the first stage. He has used Paquin's serum in seven cases, and thought it hastened death. A vast majority of persons dying at sixty to seventy years have tuberculosis of some kind. He uses creasote and cod-liver oil. The general treatment is simply hygienic. Do not send advanced cases away or use serum. In diphtheria, the antitoxine stops the progress of the bacilli for awhile at least, while the system is being built up, but in phthisis, this is not possible.

Dr. Vincent said he had spent seven summers in Texas. In India, in Arizona desert, the level was 300 feet below the sea; the water is pumped all the time; it is a perfect oasis; rainfall, 1½ inches; temperature in the sun, 140° F.; in the shade, 130° F. He has seen persons with phthisis recover during their stay there.

Dr. Johnson Eliot was sorry to hear that so many had derived so little benefit from the larger doses of creasote. As reported before the Society, his success with creasote, generally speaking, was satisfactory, and he should continue to use it. To-day, he saw a patient who is taking twenty-one drops of the carbonate three times a day; this patient has not experienced the slightest gastric symptom. As far as its action in the economy on the tubercle bacilli, Sommerbrodt holds that the tissues may be *oversaturated* with creasote and act as a germicide in the tissues. Funkenhauser recites the case of a physician who for three years took gr. ¼ doses without the slightest benefit, but when the dosage was increased, benefit set in. He can add nothing to what has been said of climate. Sanitaria for the tuberculous are coming strongly to the front, and the statistics from these places are very favorable; unfortunately, it is only the better or wealthier classes that can take advantage of them. A consumptive needs home ties, and the severing of these, either in going to a sanitarium or a new climate, should be a matter of important consideration.

There is one important aid in the treatment of this disease that has not been mentioned; it is *the use of the bicycle.* The reports from Massachusetts state that the mortality from consumption among women during the last few years has greatly decreased. This is attributed to the more general use of the wheel. It gives a mild and pleasant exercise, carries many outside of the city into fresh air, and causes great increase of lung capacity. He has knowledge of a male where the chest measurement was increased from 2½ to 5¼ inches. He does not approve of the use of morphia for cough; it causes a locking up of the purulent discharges and causes in itself, especially where cavities and elevation of temperature due to putrefaction of these masses, blood poisoning. Mays, of Philadelphia, brought forward the strychnine treatment, suggesting that the pneumogastric was at fault and the disease might be classed as a neurosis; he uses larger doses than those given by the essayist; he increases his dosage to gr. ¼; he has had in two cases good results from the use of permanganate of potash, in loss of appetite; about two grains of the permanganate are dissolved in a quart of water; this gives a reddish solution, of which the patient is directed to drink about half a pint three times a day. The diarrhœa is often relieved by the use of creasote. In one case where this was a symptom, the temperature was reduced from 105° to 100⅕°; the diarrhœa ceased and has not returned.

Dr. J. S. Morgan said phthisis appears to be on the increase. Cases have been sent to Aiken, S. C., in the second stage, and have returned apparently cured. Creasote does not inhibit the disease, but acts as an antiseptic. He knows of cases he had to take off the bicycle on account of the exhaustion from overwork of the heart. In diarrhœa of phthisis, creasote is very useful. Penrose, of the University of Pennsylvania, had spent about two years in New Mexico, and considered himself cured when he returned to his home.

Dr. Mayfield said he had not been able to use the large doses recommended, 9 to 12 grs. daily being the maximum dosage reached without disturbance of the digestive function and causing consequent loss of appetite. He was in the habit of using codeinæ sulph. freely for the relief of cough with happy results—it neither constipates nor nauseates. For constipation, he has found cascara to be the best remedy obtainable. He does not look with favor upon the administration of alcohol in any form, except in infrequent doses to tide over temporary weakness, for it produces pulmonary congestion and so adds to the existing disease. Opium and morphia he uses in the last stages only when comfort for the patient is the only thing to be considered, or for persistent diarrhœa. Considers strychnia as something more than a stimulant. It is a true tonic, acting as a simple bitter in stimulating appetite, and, as Pohl has shown, increasing white corpuscles and their peptone-carrying power. In an examination of fully 1,000 men, has never seen a chest expansion of over 5¼ inches.

Dr. Chamberlin said that chest gymnastics increase the chest expansion; he himself had an expansion of nearly six inches The bicycle is useful many times. In pus cases benzoin is useful. For cough, he uses codeia and terpin hydrate, and for inducing sleep paraldehyde. He spoke of the possibilities that might be derived from blood-letting followed by transfusion.

Dr. Sothoron spoke of out-door exercise and good diet, and thought the longer patients were prevented from leading sedentary lives the better they fared.

Dr. Kober said that there are many facts to indicate that tuberculosis, pure and simple, is a comparatively latent disease, and its curability is proved by evidence of the post-mortem room. The chief danger is evidently due to a mixed infection, the streptococci and staphylococci, which bring about destructive changes, and a chain of constitutional symptoms. Tuberculous antitoxin can only inhibit the development of the tubercle bacillus, and is therefore indicated before mixed infection has taken place. The good effects of hygienic regimen and climate, in advanced stages of phthisis, are possibly due to their inhibitory effects on the septic organisms. It may be that the very dryness of the air of Southern California, Arizona, New Mexico and elsewhere is destructive to the growth of these germs, and thus promote a cure.

Dr. Mayfield said he could not understand what benefit Dr. Chamberlin would derive from blood-letting; the blood would be thinned and rendered poorer.

Dr. Chamberlin said the blood-letting might probably cut off the disease products.

Dr. Hunt, in closing, said that while he had had no personal use with the large doses of creasote advocated by Dr. Johnson Eliot, yet Dr. Forwood, the attending surgeon at the U. S. Soldiers' Home Hospital, found it of no value in hundreds of cases, a fatal termination ensuing while the patient's system was saturated with the drug. In regard to the Paquin's serum, Troudeau, in a very recent report, finds that the serum, instead of being beneficial, is really harmful in experimental tuberculosis.

An Acrostic—La Grippe.

The pain and general agony which beset the system of the unfortunate who is attacked by that enemy of human kind—la grippe—were never so uniquely described, nor relief so cleverly indicated, as in the subjoined acrostic on the word "antikamnia" by Dr. Frederick B. Sutton, of Atlanta, Ga.:

A-ll the nerves gone on a bender,
N-ot an organ is exempt;
T-eeth and scalp and muscles tender,
I-cy chills, the bones pre-empt;
K-aleidoscopic are the symptoms legion,
A-s they over-run the system,
M-aking life a weary region,
N-o one able to resist them.
I-s there nothing that will cure?
A-ntikamnia will, I'm sure!

Analyses, Selections, etc.

Sequelæ and Treatment of Cholelithiasis.

Charles A. L. Reed, A. M., M. D., Cincinnati, Gynecologist to the Cincinnati Hospital, read a paper on this subject before the Academy of Medicine of Cincinnati, March 15, 1897, which was fully discussed. (*Cincinnati Lancet-Clinic*, April 10.)

It is generally supposed that the passage of gall-stones *per vias naturales*, or their extirpation by operation, terminates the pathologic state. This is in a measure true, particularly with regard to the calculi themselves, for they but rarely recur after their complete removal. But the observation cannot be held as accurate with respect to either local organic or general systemic states induced by a more or less long persistence of cholelithiasis. While in a majority of cases there is return to former good health following the removal of gall-stones, there are other cases—constituting, indeed, a small but none the less important minority of the whole— in which there is a persistence of symptoms referable to either the liver or the bile-passage, or both, or in which a more or less serious constitutional state impedes convalescence. In those cases in which symptoms persist, the interesting question at once arises whether or not—the gall-stones having been the antecedent condition—the remaining complications were caused by their presence, or whether there are remaining calculi to account for the persistence of symptoms. Another highly important question arises as to the influence of cholelithiasis in establishing incurable conditions. A brief *resumé* of at least some conditions that are clearly and distinctly caused by gall-stones is, therefore, presented.

The first condition that forces itself upon one for consideration, is that of *cancer of the liver or gall-tract.* My attention was called to the probable causal relationship of gall-stones to cancer by one of those peculiar experiences, that we can only call coincidence: I operated in a short space of time upon three cases of gall-stones, and found each of them complicated with malignant disease of the gall-bladder or liver, or both. In each case the history of cholelithiasis antedated that of cancer—indeed, in two of the cases, in the absence of tumefaction or other symptoms not explainable on the theory of gall-stones, the existence of malignant diseases was not suspected until revealed by exploratory incision.

We recognize carcinoma, pathologically, as

"an atypical proliferation of epithelial cells from a matrix of embryonal cells of congenital or post-natal origin" (Senn), but, leaving out of consideration developmental errors, why do we have the mitral, the primary migration of epiblastic cells into mesoblastic structures? It is difficult to find an explanation in the absence of the element of injury to the epithelium, inflammation of a destructive character, or persistent irritation. This element in the causation of carcinoma is recognized by so conservative a writer as Mr. Butlin, who calls attention to the prevalence of epithelioma in cutaneous areas the site of chronic eczema, to carcinoma of the tongue in cases of psoriasis and ichthyosis involving that organ, to carcinoma uteri in cases where the cervix has been long the seat of ulcerative or cicatricial irritation. I can imagine no condition in which an epithelial surface is subjected to more profound irritation than in impaction of any part of the gall-tract by calculi; and this irritation, with its consequent destruction of the epithelial layers, is proportionate to the firmness and chronicity of the impaction. Shall we look upon this area of epithelial abrasion as a hiatus through which cells, inflammatory in origin, embryonal in development, and epithelial in type, become displaced into the underlying matrix and there become the nidus of an atypical growth? Or shall we look upon it as an infection atrium through which a micro-organism of a specific character gains access to the underlying tissues and there establishes the neoplastic process which finally finds expression in the fully developed carcinoma? Whatever may be the final conclusion, it is of little concern to us at this juncture, for, however it may be decided, the rôle of mechanical irritation remains an equally important one in the class of cases now under consideration. If it were not for the mechanical injury to the epithelium there would be no migration of the epithelial cells, if no atrium existed there could not be invasion by protozoa or other micro-organisms. With this view of the case it only remains for us to determine which was the antecedent to know which was the causal condition.

Primary cancer of the gall-bladder is found associated with gall-stones in 95 per cent. of all cases. In the vast majority of all cases the history of cholelithiasis antedated that of the malignant diseases, while in certain of the remaining cases it was the only history given until the cancerous condition was revealed either by exploratory incision or by autopsy.

The relationship between gall-stones and primary cancer of the ductus communis choledochus is upon a firmer foundation. I do not know of a single case of primary carcinoma of this canal recorded in literature but that was either preceded by or accompanied with gall-stones. All sixteen cases of cancer of the common duct collected by Deetjen (*Deut. Arch. f. klin. Med.*, B. 55, p. 211) were preceded by a history of gall-stones, and the same fact pertained to the case of May (*Münch. med. Woch.*, August 16, 1893). There was not only an antecedent history of gall-stones, but in a majority of the cases one or more calculi were found impacted, or, occasionally, encysted in the common duct at the site of the primary development of the cancer.

Infection and suppuration are among the most important sequelæ of gall-stones. The bacillus communis coli, streptococci and staphylococci have been demonstrated in the gall-bladder and in multiple abscesses of the liver. The avenue of infection is far from being demonstrated. The law of probability seems to apply with equal force to the various hypotheses. In the instance of infection by the bacillus communis coli the probabilities are that infection takes place by progressive invasion of contiguous mucous tracts, while with either the streptococcus or the staphylococcus the invasion may take place through either the blood or the lymph channels. Observations have been made in a limited number of cases that would seem to establish the possibility of the infection depending primarily upon invasion by Eberth's bacillus.

Infection may result not only in empyema of the gall-bladder, but in suppuration of the liver itself. Among conditions but rarely associated in the professional mind with cholelithiasis is that of multiple abscess of the liver. A case—and but one of this variety has fallen to my experience—is appended. Its salient points are recounted in the following recent letter from the attending physician, Dr. J. S. Beck, of Dayton, O.:

S. S., commercial traveler, had gall-stone history extending through four years. He came home August 17, 1893, sick; had a violent chill, followed by high fever, dry skin, thirst, nausea and persistent vomiting. Jaundice soon appeared; chills at irregular intervals; continuous fever, temperature ranging from 100° to 104°; appetite abnormal, anorexia continued; skin grew more sallow; stools were gray, pasty and of vile odor; there was intense pain in the hepatic region; restlessness and insomnia, cough and abundant expectoration. The pain was more or less paroxysmal. You opened the gall-bladder October 12, 1894, and evacuated

quite a quantity of pus, large amount drained away following the operation, and he died October 17. Post-mortem showed large abscess on posterior surface of liver, and the entire gland throughout was studded with abscesses of variable sizes, from a pea up to a walnut. *A number of gall stones* were found in the abscess cavities.

The frequency with which gall-stones cause *abscess of the liver* is undetermined The literature is, however, not without instances in which biliary concretions have been discharged through sinuses formed by burrowing abscesses. One of the most remarkable cases of this kind is recorded by Jole (*Bulletin de la société anatomique*, Paris, No. 20, 1893). In this case a previous history of gall-stones was followed by suppurative hepatitis and a hepato-bronchial fistula, a gall-stone being coughed up in the purulent expectoration. The discharge of gall-stones through sinuses in the abdominal wall formed by discharging hepatic abscess has been repeatedly observed.

Among the more important of the permanent changes which occur as the result of prolonged impaction by gall-stones is *the development of diverticula.* These have been observed by others in both the cystic and common ducts. My own observation is restricted to a single case in which I operated for the relief of gall-stone symptoms. In this case, which occurred in 1894, a diverticulum was formed from the hepatic surface of the gall-bladder. The sacule contained about a half-dozen small concretions. The walls of the little investment-pouch were, however, so thin that a digital exploration of the region resulted in their rupture, necessitating the removal of the gall bladder, the extreme atrophy of which prevented its treatment by any other means.

In certain cases in which the stones have passed spontaneously *per vias naturales*, or in which they have been removed by operation, *there remain certain of the preëxisting symptoms.* Chief among these are icterus, pain and hepatic enlargement. A secondary operation will reveal the absence of stones, but the presence of cicatricial stenosis at the site of former impaction. I have had a single case in point. A woman of about sixty five years of age was referred to me several years ago for operation for gall-stones. She had had a previous history of these concretions extending over several years, and had passed several very large specimens during that time. I found several very large stones in the gall-bladder. The most suggestive feature of her case at the time of the operation was a marked *icterus with no apparent obstruction in either the common or hepatic ducts.* The next suggestive feature was the *persistence of the biliary fistula* in spite of all conservative means adopted for its closure. The third significant fact was the *persistence of white stools* after the operation. The three symptoms, taken in connection with the fact that in this case, as in no other one in my experience, there was as much escape of bile during the day as during the night, indicated stenosis of the common duct, probably cicatricial in character, and due to the damage done by the transit of the large calculi which she had discharged by the bowel from time to time during the previous years A cholecystoduodenostomy with a Murphy button was done with complete satisfaction, the patient, an old lady, having since gained over thirty pounds.

One of the most frequent of the more or less permanent results of recurrent attacks of biliary colic is the *development of adhesions* surrounding the gall bladder and the bile ducts. As a rule, these conditions do not occasion either a persistence of the old symptoms or the development of new ones. I have had a recent case, however, that has been an exception to the rule. A man of about thirty-five years of age was referred to me by his attending physician, Dr. J. P. Allen, of this city. There was a distinct history of gall-stones extending over a long series of years. The attacks, which would come on at any time of the day or night, were of extreme severity. At times they would be prolonged over a week or more, when they would be accompanied with extreme tenderness in the right hypogastrium, some swelling and a high temperature. One of these attacks, two years ago, culminated in the discharge of a number of very large calculi by the bowel. The active symptoms immediately subsided, and he considered himself quite over his trouble, when he experienced a return of the colicky attacks. These recurred at comparatively frequent intervals, with more or less of tenderness over the region of the gall-bladder in the interim. There was this marked difference in the symptomatology: *the attacks, which were formerly chiefly diurnal, were now exclusively nocturnal.* An exploratory incision revealed a medium sized gall-bladder, containing but little bile. No stones could be detected in either the gall-bladder or ducts, both of which were, however, surrounded by old and firm adhesions. One band in particular crossed and constricted the gall-bladder near its cervical extremity. These adhesions were broken up, with immediate subsidence of all symptoms referable to the gall-bladder. He has had no

attack since the operation, now over eleven weeks ago.

It was only the revelations at the operation that explained the change from day to night in the previous occurrence of the pain. This was obviously due to the fact that the constrictive function of the adventitious band near the neck of the gall-bladder was only exercised when that viscus was most distended by bile. Every abdominal surgeon who has done a number of cholecystotomies by leaving a temporary biliary fistula is aware that from three to six times as much bile will flow during the night as during the day. The fact is that the gall-bladder is not called into requisition to any important extent as a bile reservoir except during sleep, when peristalsis and intestinal digestion are in abeyance. It was precisely this distension, with the resulting tension of the inflammatory band, that caused the nocturnal attacks of colic in this case, whereas a copious influx of bile into the gall-bladder is liable to dislodge rather than to engage a foreign body such as a stone.

Among the rarer results of cholelithiasis may be mentioned *obstruction of the bowels by a large escaping calculus.* I recently saw an old lady, who had violent symptoms of intestinal obstruction. Cathartics had been given, but without avail. Shortly after my arrival, however, and during my stay, the patient expressed herself as feeling relieved, and in the course of an hour discharged a lot of semi-liquid fecal matter, with two very large gall-stones. Cases are on record, however, in which surgical interference was required to overcome the obstruction. In one case by Gusenthal (*Med. News*, Philadelphia, April 28, 1894) the stone was found in the duodenum, while in one by Korte (*Deut. med. Woch.*, Leipzig, February 28, 1894) the point of lodgment was in the ileum, ten inches above the ileo-cecal valve. In both instances the stones were removed by incision, followed by recovery.

Among the still rarer sequelæ of gall-stones may be mentioned *intestinal obstruction, caused by bands the result of localized peritonitis*, this in turn having been caused by previous gall-stone impactions. An illustration of this condition was furnished by Korte's case, in which recovery followed the operation for obstruction of the ileum due to gall-stone impaction (*Med. News*, April 28, 1894). This patient died ten weeks later from obstruction of the jejunum by old inflammatory bands. I was called a few years ago to operate for intestinal obstruction in a middle-aged woman. The patient, who had been stricken suddenly, gave a history of unimpaired previous good health, with the exception of a single severe attack of hepatic colic, lasting a week or more, a number of years previously. The operation revealed the fact that the jejunum had become looped over an adventitious band. That this band had its origin in the attack of cholecystitis experienced several years previously, while not demonstrated, is yet probable.

The fact should take deep hold upon the profession that cholelithiasis, even when viewed in the light of its consequences, is a dangerous condition, and that the dangers are largely proportionate to the severity of the attacks, to the frequency of recurrences, and to the time embraced in the persistence of the disease.

DISCUSSION.

Dr. D. I. Wolfstein: The essayist has taken the ground that there must exist a causal relationship between stone and cancer of the gall-passages, and I find myself in thorough accord with this advanced view. Whilst the etiological influence of the protozoa or other parasites constitutes the basis of a theory very fascinating and in sympathy with our modern ideas, there has been but scanty evidence adduced in its support. The factor of injury or irritation as a cause of tumor has not been sufficiently recognized. It has been stated that but 15 per cent. of all cases are referable to this condition. This must manifestly include only the coarsest forms of injury to external surfaces, and not finer, more prolonged irritation of internal organs, especially when occurring at points of developmental complication. Ribbert attempts to explain the frequent occurrence of carcinoma at points of irritation by making the previous inflammation the exciting cause of a tissue alteration, which may be followed by tissue over-growth. According to Ribbert, every cell has an inherent power of growth, an excess of energy above that which the cell really puts forth. Each cell is restrained from exhibiting its full growth power by the fact that it is a unit in a band of cells—a cell complex—in which each cell exerts a restrictive force upon its neighbor. Similarly, one kind of tissue does not trespass upon the domains of another for the same reason. This makes up what is known as *Thiersch's Law of Physiological Resistance.* Now as long as cell joins cell to make up a perfect cell membrane, every cell in that series will hold its neighbor in physiological bounds; but if from any cause this contact of cell with cell be loosened, then the cell freed from the hindering influence of its contiguous cells can unfold its full growth energy, viz., all that it

possessed during the embryonal stage, and this excess of proliferative power of one cell over another makes it malignant. Now the primary factor in the disturbance of this cell contact, according to Ribbert, is the growth of connective tissue between the cells, breaking up cell contact and permitting the excessive proliferation to be manifested. In other words, not the down-growth of epithelium into subjacent tissues, but the up-growth of the connective tissue into the epithelium, is the principal and primary factor. Herein is to be seen the power of a prolonged irritation, or inflammation. This physiological resistance may be broken up either in misplaced embryonal cell columns, or in post embryonal in the manner indicated.

Frequently a positive diagnosis is made when no stone is present. Not every case with colic in the right side, or even with jaundice, is a case of gall-stone. I recall a case where these symptoms were marked and which recovered after large doses of mercurials. In another case where severe colic had been present, also slight icterus, where a tumor could be made out in the region of the gall-bladder, and with a temperature curve simulating that of sepsis, I made the diagnosis of empyema of the gall-bladder and gall-stones, and counseled operation, which advice was concurred in by one of our best physicians. This case also recovered, with treatment consisting principally of heroic doses of calomel. These are cases of inspissated bile, hepatic torpor and duodenal catarrh.

A catarrhal condition of the gall-bladder is undoubtedly a predisposing factor in the formation of gall-stones Naunyn thinks that there is first a bile stasis, followed by infection of the stagnant stream, which induces catarrh and desquamation of the ducts. These epithelial clumps precipitate the normal solvents of cholesterin, and thus the cholesterin.

Dr. A. W. Johnstone: In at least half the gall-bladder cases when operated upon no stones are found. You may have all the symptoms—jaundice, colic, etc.—and no stones. I recall two cases. In one the bladder contained a pint of pus; there was a stricture, but no stone. Another revealed a hepatitis, and I concluded to drain and break up the adhesions, but found no stone. Both cases recovered.

I believe we operate oftener for cholecystitis than gall-stones. This condition is produced by a catarrhal inflammation traveling up the duct from the intestine; this condition limits the escape of bile and permits its precipitation with a formation like rock-candy. At least this has been borne out by my experionce, and the case is cured by an operation.

My opinion is that carcinoma is a trophic lesion. Nothing destroys more thoroughly nervous tissue than cicatrices.

There have been several little hints offered about chronic drinking of certain beverages causing gall-stones. About six weeks ago I had a patient consult me with a gall-stone attack. I advised her to discontinue the morphia she had been using, and told her husband to stop her beer-drinking. A month later she returned and said she had stopped the morphia and beer. I operated and found several small stones in the bladder. That night she had a violent time of it. After I got her quiet she admitted to being addicted to the use of morphine and ingestion of large quantities of beer for fifteen years. She died with all the appearance of delirium tremens. The wound healed perfectly. I would like to know the influence of beer in production of gall stones.

Dr. Edwin Ricketts: I will say that of my thirty-three cases of gall-bladder operations none partook of beer. Whenever the diagnosis of gall stones or other obstructive condition of the gall-bladder is made that bladder needs draining. I think gall-stones are the result of catarrh inflammation, and for this reason the gall-bladder demands drainage, as much so as in urinary cystitis.

In four operations after opening the abdomen I resorted to massage of the gall-bladder, which relieved the obstruction. One case, which was confirmed by autopsy, was that of a woman, aged forty-four, who had suffered with jaundice for four years without severe attacks of colic. Operation revealed gall-bladder contracted to one-half its natural size, and one stone, faceted, was removed from it. I probed for, but was unable to find, the hepatic duct (I always make an effort to probe this duct). Five days later there was a rush of blood, accompanied by eight gall-stones, into the primary wound, all of which were easily picked out with the fingers. The hemorrhage was controlled by gauze packing, and she died two weeks thereafter. Autopsy revealed ruptured hepatic duct, which had been enormously distended high up.

The case reported by Dr. Eichberg, of obstruction of the common duct, was probably due to a simple inflammatory condition. In a case of this kind, about three years ago, I did an intestinal anastomosis with the smaller Murphy button. The result has been all that could be desired.

Dr. Rufus B. Hall: I believe that gall-stones, from the long-continued irritation, are a potent factor in the production of cancer. The illus-

tration used by one of the gentlemen, that cancer never develops from old scars on the surface of the body, such as burns, is no comparison and, therefore, has no weight. It is generally conceded that cancer of the cervix develops, as a result of injuries following childbirth, in old scar tissue. You will recall the fact that this occurs many years after the original injury; the cervix has been left unrepaired and subjected to the irritation of chafing against the mucous membrane of the vagina, leaving an abraded surface. It is one of the rarest things in gynecology to meet with cancer of the cervix in women who have not borne children. We occasionally see cancer of the uterus in unmarried women past forty years, but it is usually primarily in the body of the uterus. It is common to see cases of epithelioma of the lip in old men who have smoked pipes for many years. It commences at the point of contact of the lip with the pipe stem. This long-continued irritation is supposed to have some causative relation to the cancer in these instances. If this is true, I cannot see why we should not expect the long-continued irritation of gall-stones to produce cancer in and about the gall-ducts. Some five or six years ago I advanced this opinion in St. Louis, and later at the Academy of Medicine, and was severely criticised. I am as strong in the belief now as I was then, for the more I study the subject the more I am convinced of the truth of the theory. Statistics are of vast importance in proving or disproving statements. At present the number of tabulated cases is not sufficient to prove anything. For this reason we should tabulate every case until the statistics prove or disprove the point.

My experience does not agree with that of some of the speakers to-night in reference to the fact that when a stone is impacted in the common duct we do not have distension of the gall-bladder. While it is true that not a few of the chronic cases of impaction have contracted gall-bladders, it is also true that not a few of the acute cases have very largely distended gall-bladders. I have operated upon cases of both varieties. The cases of distended gall-bladder are more easily managed than those of contracted gall-bladder in operation. If extreme jaundice is of longer standing than two or three weeks, and the stone impacted in the common duct, the mortality will be very high in the operation. This fact alone should induce the profession to advise early operation in similar cases.

Dr. H. M. Brown: The prominent symptoms are the results of accumulation of dried concretions in certain of the biliary passages. Yet we know from autopsies that we have found a great number of stones where antemortem there was not a symptom to indicate their presence.

Dr. Merrill Ricketts: As to the treatment of the stone in the common duct, the most scientific procedure would be by the needling process. In this way the stone is broken into fragments and forced into the gut by massage. This is resorted to many times, and is superior to removal by incising the duct. The punctures of the needle through the duct wall are harmless absolutely. Indeed, stones may many times be detected within the gall-bladder; especially may this be done in undistended gall-bladders, and is highly probable in cases of great distention—just as likely, in fact, more likely, following the abdominal incision than the detection of stone within the kidney by the same means.

The subject of malignancy is a most interesting one, especially as it appears to be a disease of civilization, the Esquimois, Dahomians and dark-skinned races in general being comparatively free from malignant diseases. Females are more prone to the disease than males. It is the custom among the dark-skinned races to marry earlier in life, and as they live as long they surely have as much cervical irritation as the Caucasians.

Dr. C. L. Bonifield: My experience differs from that of Dr. Johnstone. I have never failed to find stones, but in one case I *did fail to find a gall-bladder*. A diagnosis of gall-stones had been made a number of years previously at the Cincinnati Hospital, but her condition had improved and she had left that institution without operation. I opened the abdomen, and the most careful search failed to reveal the gall-bladder. I was about to close it when, grasping the lower border of the liver, I felt a firm, hard mass, which I supposed to be the induration surrounding an abscess. I aspirated and got very little pus, but with the needle touched stone, and knew what I had to deal with. Opening the liver, I removed a large number of very small, fragile stones, that crushed under the forceps. The liver was stitched to the abdominal wall and a drainage tube inserted. The patient died, and at a post mortem examination I was still unable to find a gall-bladder.

In another case, the gall-bladder was dragged down into the pelvis by adhesions to the right Fallopian tube, making a tumor about the size and shape of a Frankfurter sausage. I dissected the gall-bladder loose, opened it and removed one large stone of the mulberry

type. The patient recovered. The woman, a few months previously, had given birth to a child. Doubtless the adhesions between the gall bladder and Fallopian tube had formed during pregnancy.

Dr. Joseph Ransohoff: Frequently when operating for cholelithiasis, when the gall-bladder is opened no stones are found. In my whole experience, I can but recall two cases where stone was found in the bladder. I remember one case that I operated upon before my class that a stone was exhibited to the students that had passed from the bowel of the case, but when the bladder was opened it contained no stones, and had a normal appearance. One is never sure that there is a stone in the bladder until it is opened, for the stone may be imbedded low down, and it always requires the opening of the bladder to confirm the presence of a stone. Frequently in other cases we have gall sand, which is gritty in character; whether it is the result or cause of the inflammation, I cannot say. In other cases, nothing is found, no stone or evidence of stone, and we can safely say that in 50 per cent. of the cases no stone is found.

In regard to the catarrhal condition preceding the stones, I am not so certain that is the case. In my cases, the bladders were filled with stones, and apparently normal, and by removal of the stones and closure of the bladder opening they were cured. If it was due to a catarrhal condition, why should that end the catarrhal condition? May the stones not be primary, and the catarrhal condition secondary?

I have only seen one case of malignancy that I thought was due to stones. Often the diagnosis of malignancy is made when not present. I recall a case that was thought malignant, but when I cut in I found a stone.

It is often advised that as soon as a diagnosis of gall-stones is made an operation should be performed. I do not believe it should, because the mortality is 16 per cent. in those upon the gall-bladder and 40 per cent. in those of the common duct, so that the patient should be warned that there is an associated danger. If the attacks occur oftener than one or two in a couple of years, and remedial measures are of no avail, then an operation is indicated. I object to the ideal operation I have one case that I used it in, and that case died.

Dr. Merrill Ricketts: To one speaker of the evening is accredited the attempt to locate stones within the gall-bladder and kidney by introducing the needle through the abdominal wall. By using a long needle a stone can often be detected, and I believe it is as efficient as needling for stone in the kidney.

Dr. Ransohoff: Needling for stone in the kidney is being given up; it is no longer resorted to as the last best of the existence of a stone. Incision of the kidney is the only safe way not to overlook a stone.

Dr. Giles S. Mitchell: I desire to emphasize the benefit to be derived in many of these cases by the exhibition of olive oil and salicylate of sodium. I have repeatedly seen the most gratifying results follow the employment of these remedies. The pharmacopœia mentions no cholagogue of more value in the tr atment of biliary calculi or catarrh of the biliary ducts with inspissated bile than salicylate of sodium. Olive oil acts in an entirely different way, but is quite as, if not more, serviceable. It is converted in the duodenum into glycerine and soap. Glycerine, owing to its wonderful hygroscopic property, dehydrates congested and inflamed tissue with which it comes in contact and renders it soft and distensible. It is in this way that it accomplishes so much good in hepatic colic. It permeates the ducts and renders them dilatable, and makes it possible for the impacted stone to escape into the bowel. If this be true, why not give glycerine instead of olive oil? Because glycerine is digested by the stomach and could not find its way to the seat of trouble; olive oil, like other fats, is not acted upon by the stomach, and reaches the duodenum without change in its chemical formula, and in the vicinity of the common duct is largely converted into glycerine.

I must enter my protest against the sentiment that cholecystotomy is indicated as soon as a diagnosis of gall-stones has been made. No case should be operated upon until after medical treatment has proven futile. I have repeatedly seen cases of the most severe and aggravated form of this malady cured by the judicious administration of salicylate of sodium and olive oil.

Concerning diagnosis, the following case illustrates how readily a mistake can be made: Mr. F., aged forty-two, small, bilious temperament, first seen August, 1892. His complexion was that of a pickled olive, his stools as white as chalk, and his urine as black as ink. On palpation, a tumefaction in the region of the greater curvature of the stomach, tender to pressure, was readily mapped out; the gall-bladder, as large as a small orange, was readily differentiated; indeed, its prominence through the thin abdominal wall was recognized by inspection. My diagnosis was gasrto-duodenal catarrh with gall-stones, and

prognosis favorable. When I met the attending physician, I learned that a diagnosis of cancer of stomach and liver had been made by five or six distinguished medical men of Europe, and concurred in by him and two other eminent physicians. So serious was the prognosis that the physicians had estimated that Mr. F. could not live longer than five or six weeks. After being put upon large doses of olive oil and salicylate of sodium, he began to improve, and at the end of eight weeks was able to leave his house a well man. His health is perfect, and his complexion never was so good as since his recovery. The stools were carefully washed through a sieve by a trained nurse, but no gall-stones were found. This was a case undoubtedly of gastro-duodenal catarrh with inspissated bile.

Dr. Wm. Judkins: As to the large quantity of bile secreted during the night, probably Dr. Reed will recall a case operated upon at the Sixth Street Hospital, in which this was a marked condition. In the same connection, I had an elderly lady who, during the night, would vomit a pint and a half of bile, but during the day not more than a teacupful. The autopsy revealed thirty-two stones.

Dr. Joseph Eichberg: I would not be understood as favoring early and indiscriminate operation in all cases, as soon as the diagnosis is made; yet I cannot deny that gall stones do, at times, act as provocative or direct exciting causes of malignant disease. How this is done, it were idle to speculate.

The theory of diminished local static resistance, to which allusion has been made, a sort of lowered counter-pressure, hardly explains anything. It might probably suffice for the purely speculative solution of the problem in cases of malignant disease following trauma, but it will not account for the very early and often rapidly progressive secondary deposits taking place in internal organs at points remote from the original seat of the affection; such secondary deposits being so situated that the later growth cannot be traced to infection along the line of the lymphatic or blood circulation.

A gentleman of considerable experience has said that in but one case could he feel assured that the gall stone was the cause of the malignant growth in the liver. One case is enough. It is not claimed that every impacted gall-stone produces a cancer, but the possibility of its doing so should be borne in mind, especially in patients past middle life.

Dr. Merrill Ricketts has stated that gall-stones are rare among the negroes, and cancer of the liver is very infrequent in Dahomey and among the Esquimos. The first observation, if corroborated, would find a ready explanation in the fairly active lives led by the colored race and in the rather simple food which their financial position necessitates for them. As to the second statement, I have not read the report of the pathologist to Dahomey, and I would even venture to doubt whether properly conducted autopsies are of sufficiently frequent occurrence among the Esquimos to justify any such general statement.

One of the speakers has cast some doubt upon the assumed catarrhal condition of the gall-bladder; he says it is not encountered upon post-mortem examination in cases where gall-stones occupy the gall-bladder. Pathologists have learned not to expect evidences of catarrhal inflammation at the autopsy, even where the symptoms undeniably pointed to its existence *intra vitam.* The swelling, congestion and sponginess of the mucous membrane, so characteristic when seen upon the living patient, are no longer present when life has ceased. This is true alike of all mucous membranes for all catarrhal processes except the most acute.

Another objection has been urged to the theory that a catarrh of the bile passages precedes the formation of gall-stones. "Why," it is asked, "if this is true, do we see a complete subsidence of all the symptoms after an operation, whereby the stones are removed? Such patients get well without recurrence of the symptoms." The reason for this is not far to seek. Preliminary to operation in some cases, as part of the routine after-treatment in all, the patients are subjected to such forced restrictions of diet, both as to quantity and quality, as are most likely to allow of the spontaneous cure of a gastro-intestinal catarrh. These restrictions are maintained for a considerable time; to them is added the effect of a depletion of the portal circle by saline purgatives, so that the best possible opportunity is given for the relief of that condition which so frequently precedes the formation of these concretions.

Dr. Reed: The object of my paper was to portray the consequences of gall-stones, and to, inferentially, use the facts thus presented as an argument for the more general earlier operation in these cases. I would not have it understood that I advocate operation in every case of diagnosis of gall-stones, much less of hepatic colic. On the contrary, the majority of cases of biliary calculi get well after the passage of the stones, which generally occurs after the first or

second colicky seizure. When cases go beyond this point, the question of operation should be taken under serious advisement, and as a rule, should be done at an early date.

As a rule, the dangers of the operation should not be taken as a deterrent influence. We all know that in uncomplicated, which generally means early, cases, the mortality is low, and even in cases alluded to by my friend Dr. Ransohoff—cases of impaction of the common duct, in which the mortality is in the neighborhood of 40 per cent.—the deaths are not so much due to the surgical difficulties as to the cholæmia and anæmia, the results of delay.

As to the statement by Dr. Eichberg, that collapse of the gall-bladder was so constant a condition in impaction of the common duct as to be essentially characteristic, it may be the rule; but if it is, my own experience does not confirm it, for I have operated on at least four cases of impaction of the common duct in which there was very marked distension of the gall-bladder. Other operators now in this hall have had similar experiences.

A Mixed Group of Abdominal Sections, with a Discussion of Methods.

Dr. Joseph Price, Philadelphia, reports (*Med. and Surg. Reporter*, April 3, 1897) in a paper read before the Philadelphia County Medical Society, March 10, 1897, a group of consecutive operations to demonstrate, first, that gynecological operations should be done for disease only; second, that if our simple tested methods are followed faithfully, and operations are completed, the mortality can be made uniformly low; third, that operations should not be delayed by the general practitioner.

Generally, our departure from simple, easy, scientific and common-sense methods results in mischief. The varied and complex conditions with which we have to deal do not call so much for surgical genius as for surgical common sense. Skill and success in doing comes of doing. In surgery it is not safe to assume advanced theoretic positions on the mere faith that they will afterwards be confirmed. Such theories often lead to dangerous experimentation with human life.

In all surgical troubles, those that commonly possess minutiæ or detail should receive the closest attention. Little things become agencies working good or evil. Size often is given undue importance, while not infrequently it bears small relation to the seriousness of the trouble. The very minute may be the very dangerous. There should be special study of the pathology of intraperitoneal and pelvic disease, with a long apprenticeship in dispensary service. Where opportunities exist for careful study in the diagnosis of pelvic troubles, such diagnostic skill should always be attained before there is any attempt made in the surgical treatment of abdominal troubles.

In presenting a mixed group of operations, selecting from a series each of a hundred, about every known and established procedure was called into practice. At the present time, sections for suppurating forms of disease are most common, in excess of all others; fibroids and cystomata follow, and following in very close order come tubal pregnancy and appendicitis.

In surgery, as in other things, we coin from our experiences our best lessons. My earlier experiences and my later ones have confirmed in me my conviction of the importance of drainage. It has had its advocates, and those denying its value, those indifferent to its use; and not a small number claimed that its use was evidence of imperfect, incomplete or bad surgery. Just now it would seem that all are drifting to its use.

It has been claimed that drainage is not necessary in "ordinary" cases, owing to the absorbent power of the peritoneum to remove secretions. It requires more prescience than any of us possess to decide in many cases that the peritoneum will rid its cavity of the exuded fluids from broken-up adhesions. If the tube has no injurious effect, it is better to use it in every case than to risk non-absorption in a single case, which may have been thought to be "ordinary," but which has turned out the reverse. The question resolves itself into distinct propositions: First—Is there any danger from the retention of fluids in the peritoneal cavity? Second—Is the use of the drainage tube a safe means of obviating these dangers? If the tube involves in its use an element of danger, what are the comparative dangers from its employment or its omission? That the peritoneum will, in many cases, relieve itself of exuded fluids, may be accepted as true. Experience has also shown that when it refuses to do so unaided, the free use of salines often assists it, and cuts short an acute attack of peritonitis. Experience has also shown that this mode of treatment often fails, necessitating the re-opening of the abdomen, thorough irrigation and the secondary use of a drainage tube, even though no pus has been discovered on the re-opening.

The fallacy in supposing an operation simple because no great adhesions have been involved, lies in the fact that great secretion can arise from small adhesions, and that ex-

udation of blood, which seems nothing at the close of the operation, may, when the patient rallies from the shock of ether and of the operation, become very considerable. Does the use of the tube involve a question of danger? My answer is, were half the care used to keep the tube carefully cleaned, and to protect it from external contamination that characterizes the Gatling gun warfare against germs supposed to enter through it, there would be little cause to fear it. If the tube is kept clean, if it is emptied often, it should be removed by degrees, commencing as soon as the discharge seems to be at a minimum, and in most cases no more irritation will be caused by it, or with it, than some inadvertence will explain. When an entire pelvis can be packed with lint to subdue hemorrhage, is it possible that a simple glass tube can cause such troube as is frequently attributed to it? As to the use of the tube, my own experience teaches me that when kept clean, by frequently changing the cotton, and with careful attention to that part of the incision through which the tube is introduced, there is not the slightest danger of septic infection from its use.

This conclusion is reached after its application in extreme cases of pelvic adhesion, extra-uterine pregnancy, hysterectomy, pus-tubes, and (so-called) simple operations. I have never had a single case in which I could justly attribute unfavorable results to the use of the tube. On the contrary, I have seen more than one case in which its absence has been followed by mischief, which was relieved by its introduction. I have seen cases, too, in which I believe failure was due to its omission. Concomitant with drainage comes its adjunct, *irrigation.* It is of the greatest possible use to insure complete removal of *debris,* clots and shreds.

As to the use of solutions, they have fortunately had their day. Much of the intestinal mischief for which they were responsible will go unrecorded. As to the time for removal of the tube, nothing should influence this more than the nature and quantity of the discharge. When this is clear, sweet and scant, the indications are for removal. It has been held that the introduction of the tube delays union, and increases the danger of ventral hernia. This my own experience discredits.

Ventral hernia, I believe, results, in most cases, from two causes: First, a very long incision; and second, getting up too soon and abandoning the abdominal support too early. A *short incision,* and due care to keep the patient in bed and at *rest,* a sufficient time for the margins of the incision to organize and consolidate, together with abdominal support through a period of months, will obviate this trouble.

There is much mischief worked by the use of certain wards. They have a vicious significance for students and beginners. Among them are such as "hopeless," "inoperable." They express surgical cowardice, and are responsible for the death, or long-continued suffering of many noble women, who could be relieved of their suffering and their lives spared. They are words certainly not entitled to place in our surgical vocabulary.

The spirit should be all abroad in the profession to go at our work, uninfluenced by self, with the highest courage and the deep persuasion that it is duty to relieve suffering and save life at any and every cost, and not to hesitate or stop until the work is done, and completely done. If this is ideal, then he becomes the better surgeon who sets it up as such, and reaches for it. We cannot save all, but we can save more than we do by less hesitancy, greater promptness, more directness and thoroughness, and through better studied and more carefully applied surgical art.

As to the justification of certain operations there will always be a wide difference of opinion. In this relation, we will take the opinion of those who, by their experience, have a just claim to speak.

As to the uterine growths or fibroids, so violently at one time did the discussion rage that the doors of professional courtesy were closed upon the advocates of the operation; and in 1872 a committee of the Academy of Medicine of Paris condemned the procedure, reporting that "the extirpation of a uterine tumor is always a serious matter; the uncertainty that exists of completing the operation, the risk of fatal hemorrhage, the nervous shock, peritonitis, and secondary hemorrhage;" and they concluded by asserting that "the success obtained by some surgeons proved nothing."

The work of different operators differs widely in character. Some good operators absolutely refuse complicated operations; they do large numbers of ventral fixations and shortening of the round ligaments (Alexander operation); they also practice incision and drainage, with a mortality higher than it should be in complete work, say four per cent. in vaginal incision and drainage for pus. All-around complete surgery, as given and practised by the originators of our established procedures, would place us on a good and safe footing.

I have not lost a patient since October 16,

1896. The one dying on that date had been ill for some years. The precise nature of the trouble—suppurating tubes and ovaries, with adhesions extending as high up as the umbilicus—had been recognized by two or more attendants. The emaciation and anemia were alarming, and complete suppression of urine followed the operation.

Condensed Facts Concerning Electricity for the General Practitioner.

General practitioners desiring to use electricity in their practice, but possessing practically no knowledge of the electro-therapeutics, will do well to read, study, *and learn* the following points, taken from the *Electro-Therapeutist:*

The *faradic* or *interrupted current* cures disease mainly through physiological and mechanical processes, producing no appreciable chemical effect in the tissues.

In each faradic battery there should be two coils—primary and secondary. The current from *the primary coil* has greater quantity and produces greater mechanical effects, but lacks penetrating power, and is more useful in superficial troubles, particularly where mechanical efforts are desired. It is also of service in internal treatments for many vaginal and uterine diseases.

In the primary current there is some difference in polarity, the positive pole producing greater sedation and the negative pole greater stimulation.

The *secondary coil* produces a current having much greater penetrating power than the primary current. It will more easily overcome resistance on account of its greater tension, and is to be preferred to the primary current in treating deeply-seated conditions. The current from the secondary coil is much more pleasant in its effect, particularly to nervous subjects. There is no appreciable difference in polarity in the current from the secondary coil.

In the *direct galvanic current* there are no interruptions to the current as in the physiological and mechanical effects. There is no sensation to the current beyond a feeling of numbness and burning beneath the electrodes.

In general terms, it may be stated that the *faradic current* is to be preferred in muscular troubles, and the *galvanic* in nervous diseases.

The *galvanic current* will produce a greater degree of sedation or stimulation. It should be used to stimulate the absorbents, to remove effusions, morbid growths, callosities, tumors, facial blemishes, superfluous hairs, etc. In these conditions, the *faradic current is practically powerless.*

The *positive pole* of the galvanic current is much more sedative and the *negative pole* much more irritating and stimulating.

Electrolysis and cataphoresis can only be used with the galvanic current.

To produce the most pronounced sedative effect, and allay irritability, make stabile applications of the positive pole, galvanic current.

To produce the most marked irritation, use the negative pole of the galvanic battery or reverse the polarity frequently.

Electricity has a decided refreshing and soothing effect upon the entire nervous system, and is of great service in nearly all nervous diseases.

Either faradic or galvanic current will equalize the circulation, increase the flow of blood to the surface and extremities, and improve nutrition and assimilation.—*South. Med. Rec.*, April, 1897.

Perfected Tuberculin and Serum Treatment.

According to the *Deutsche Medicinische Wochenschrift*, Professor Robert Koch, of Berlin, has so far perfected tuberculin as a therapeutic agent for the treatment of tuberculosis as to assure the profession that he has at length secured a serum which is as curative of tuberculosis as diphtheria antitoxin is of that disease. This news sounds too good; but we will see what there is in it.

Just previous to this announcement, it is learned from the *Lancet*, that the serum introduced by Dr. Maragliano, of Rome, promises as good results in the treatment of tuberculosis of the lungs "as antitoxin has given in the treatment of diphtheria." Because of the nature of tuberculosis, "the Maragliano serum" cannot assert its power so rapidly and decisively as antitoxin does in diphtheria. Even in hospital cases, where the patient is usually far advanced in disease, with strength sapped by fever and hæmorrhage and malnutrition, leaving him with low resisting power, he has had most encouraging results; although it is in private practice that he has met most success, because he sees patients at an earlier stage of the disease, while they yet have the greater comforts and care of home. Dr. DeRenzi, dean of the Italian clinicians (Neapolitan School), advises one not to despair, even though two hundred injections have failed of gratifying results. He had forty hospital cases of cure, and equally good results in private practice, with the Maragliano serum. Improvement was noticeable even in the most intractable cases. He has inoculated consumptives with five milligrams

of Koch's tuberculin, and obtained the strong characteristic reaction; but applying the same treatment to those already under the Maragliano treatment, the reaction was less marked, showing immunization against the "protein tubercolari." Increasing the number of injections of the Maragliano serum augmented the immunity until after thirty or forty injections, there was scarcely any reaction to the same dose of tuberculin. DeRenzi thinks there is no remedy for phthisis equal to the Maragliano serum—saying that it seldom fails to relieve, and persevered in, it almost invariably cures.

Diagnosis of Pregnancy by the Shape of Urinary Phosphates.

Dr. Parke, of Philadelphia (*Amer. Gyn. and Obstet. Journal*), confirms some researches made by Dr. Wm. B. Gray, of Richmond, Va., nine years ago. He has studied seventy-five specimens of urine of women known or thought to be pregnant. When conception occurs the triple phosphates in the urine change their form. They lose their feathery appearance, the change beginning at the tip and progressing towards the base. One side only may be affected, or both, leaving only the shaft and perhaps a few fragments adhering. The shaft assumes a beaded or jointed appearance. These changes commence within twenty days after conception, and are most marked in the early months, and almost absent in the later months. When the death of the fœtus occurs, the phosphates, according to Gray, resume their normal appearance, but Parke has not had the opportunity of confirming Gray's statement. The change in the form of urinary phosphates being recognizable very early, it is of the greatest value when other signs are of the least reliability or not present at all. A diagnosis of probable pregnancy can be made without a physical examination or without exciting the suspicion of the patient.—*St. Louis Med. and Surg. Journal.*

Tongaline.

Dr. Deering J. Roberts, of Nashville, Tenn. (*Southern Practitioner*), has recognized "material benefit from the use of Tongaline during several years past." Its ingredients "have been demonstrated as especially valuable in neuralgia, rheumatism, gout and sciatica," pains of la grippe, nervous headache, etc. He earnestly recommends the preparation in acute rheumatism and neuralgic affections. Many others "speak in most high terms of it, after a thorough and repeated trial."

Book Notices.

Retrospect of Practical Medicine and Surgery—A Semi-Yearly Journal. Edited by JAS. BRAITHWAITE, M. D., London, Obstetric Physician and Surgeon to Leeds General Infirmary, etc. *Assisted by* E. F. TREVELYAN, M. D., Lond., B. Sc., M. R. C. P., etc. Vol. CXIV. January, 1897. New York: G. P. Putnam's Sons. 1897. Cloth. Small 8vo. Pp. 435. $1.50 per Part; or $2.50 a year in advance of publication. (For sale by Geo. M. West, Bookseller, 909 E. Main St., Richmond.)

The American Publishers for the first time now adopt the smaller octavo form which has all along, for over a half century, been adopted by the English Publishers. The size and binding in book form make it eaaier to preserve in the library, while it also is much more handy. It is, however, as to its contents, the same old reliable retrospective view of nearly every discovery and practical improvement in the medical sciences brought out in journals or books published during the previous six or eight months. Each department is under a specially selected editor, able to recognize the new and useful in journals generally, and trained to make such synopses as embodies every essential in the article from which compilation is made. We most cordially commend Braithwaite's Retrospect as a true *multum in parvo*—which is sold at a price that puts it in the reach of nearly all practitioners.

Hypnotism, and Its Application to Practical Medicine. By OTTO GEORG WETTERSTRAND, M. D., Member of Society of Swedish Physicians at Stockholm, etc. *Authorized Translation from the German Edition by* HENRIK G. PETERSEN, M. D., Membre of the Societe d' Hypnologie et de Psychologie, Paris, etc. *Together with Medical Letters on Hypno-Suggestion, etc.* By HENRIK G. PETERSEN, M. D. G. P. Putnam's Sons, New York and London. 1897. Cloth. Large 8vo. Pp. 166. Price, $2. (For sale by Geo. M. West, Richmond.)

This book possesses a charm which, when once opened, keeps the student reader bound to its pages. The form of discussion is by illustrative facts and cases, each of which is full of interest and instruction. We are gratified to find that the author does not claim too much regarding the therapeutics of hypnotism. Among his conclusions is that functional nervous diseases are best adapted to treatment by suggestive therapeutics. Of course pneumonia, typhus fever and the like are not deemed amenable to hypnotism; but when we remember that functional nervous diseases represent

a majority of cases occurring in daily practice, we find a broad field for usefulness, and a requirement for closer study of this branch of science. "In all diseases where the will has been enfeebled, and where it is important to strengthen it, the psychic treatment possesses great advantages." It is of peculiar interest to note the curative or beneficial effects when necessary to reform character—a fact which has been abundantly proven; and what is of almost equal value is the fact that, in many instances, the cure is permanent. Hypnotic treatment does not involve the patient's life or health—although injury may result from radically wrong methods of procedure.

Dr. Petersen's *Medical Letters'* part of the book contains many items of information or of profit. One of the chapters is devoted to teaching that "music, not sermons, in insane hospitals," is a real demand. This book is about the fairest, plainest and most useful presentation of the therapeutic applications of hypnotism or suggestive therapeutics that we have seen.

Year-Book of Treatment for 1897. By TWENTY-SIX ENGLISH CONTRIBUTORS. Lea Brothers & Co., Philadelphia and New York. 1897. Crown 8vo. Pp. 480. Cloth, $1.50.

It is scarcely necessary to say more than that this is a critical review of both old ideas which have been questioned and new ones introduced during the past year relating to the practice of medicine, surgery and obstetrics. As such, it commends itself to *practitioners.* That the work is reliable, is shown by an examination of almost any of its pages. That it is popular, is demonstrated by the fact that this is the thirteenth annual issue, and the remarkably low price charged for a book issued so neatly. It may be that some things which we Americans prize are not mentioned; but it must be remembered that the collaboration is by Englishmen, who cannot be expected to be as familiar with American journal literature as with that of the Continent. Here and there may be statements which may a little surprise some practitioners. For instance, we were not prepared to learn that charcoal has fallen out of fashion as an intestinal antiseptic, since in so many conditions we know of no remedy, new or old, that can substitute it. And yet the Section which reviews the literature on this subject gives facts which are instructive and full of suggestion. The practitioner can ill afford to do without this *year-book.*

Editorial.

License-Tax on Doctors Should be Removed.

It is quite an expensive item to be a doctor in Richmond. The State of Virginia for the past ten years or more has been charging $25.75 for the license of a city doctor who has been in practice five or more years; and for the past two years or more those who practice in Richmond have been arbitrarily assessed by a committee of the City Council, in addition, a city license-tax varying from $20 00 to $75.00 —the doctor of average prominence having to pay from $40.00 to $60.00 a year. An attempt was recently made to have the city assessments raised; but finally the committee of the Council, in a spirit of condescension, it appears, decided to let the license taxes on doctors remain as they were according to last years' assessments. This consent of the committee of the City Council not to raise on the assessments of last year was gained after hearing the facts and arguments of a committee of representative members of the Richmond Academy of Medicine and Surgery, which ought to have convinced any one of the injustice of taxing doctors at all for licenses to practice.

Look at it from almost any standpoint, the doctor occupies a special and peculiar position in any community. In the South at least, his is not a money-making profession. If he collects enough of the fees that may be due him to keep himself out of debt, it is extremely rare to find a practitioner who accumulates an amount from his patrons sufficient to keep himself and family from want if broken down health or old age overtake him. And if he dies while in the enjoyment of what is supposed to be a comfortable success, his wife and children soon feel the pinch of poverty. It requires no mention of illustrations as to the truth of this statement. They are found in every town and county. Give us the record of the death of the *good physician* of his community, of the crowded church on the funeral occasion, of the coffin covered with flowers, of eyes moistened with tears and feelings weighted by grief as the procession moved slowly on to the last resting place; and there, nine times out of ten will be found the grave marked by no shaft, and widows and orphans who soon become penniless and forsaken. The amount of money this good doctor has expended in books, and instruments and equipments generally to enable him to make himself essential in his community all goes for naught on the auction day; and yet on these very things he was assessed

and taxed as if it were valuable property. Then take his visiting lists and practice account books, and see what can be made out of them. Whoever may be appointed to settle up the so-called "estate" is amazed to see how much of charity work was done. And yet for the *privilege* of doing this charity, State and town or county levies an onerous *license* tax! Go into any city, and count up in dollars and cents the charity annually given by doctors who themselves are struggling for subsistance. The corporation may contribute a few hundred dollars for medicines, etc., but druggists and merchants get all of that for purchases made of them. Yet for the *thousands* of patients annually treated, the poor doctors receive not a cent. The vast majority of almost any regular doctor's practice, either does not pay a cent or is only part pay; so that a calculation based on the minimum fees of the profession of Richmond (which are lower than those of most cities of its size) will show that not less than $175,000 to $200,000 are annually given by doctors of this city alone for the care and treatment of the sick and wounded of the State. There is not a cent realized by the doctor on more than half of his legal claims. And yet city and State are persisting in oppressing him by exorbitant *license* taxation! With all of this oppression, by *license* taxation, no part of his property or income over legal exemption amounts is released from the usual property or income tax, as charged against all others.

We will not attempt to argue the points involved. But the time is at hand when the profession should speak out on this subject of *license* tax on practitioners, and should not rest satisfied until it is removed. If teachers, preachers, etc., are exempted from *license* tax, for equally strong, if not stronger reasons, such a tax ought not to be placed on regular practitioners of medicine in any community.

Dr. J. W. Long

Has tendered his resignation as Professor of Diseases of Women and Children in the Medical College of Virginia, to take effect after the Commencement exercises, April 22d. He will return to North Carolina, and will be in charge of a hospital at High Point, Guilford county, N. C.

Transactions of Medical Society of Virginia.

In answer to inquiry, we would state that the *Transactions* of 1896 are published. If any Fellow has not received the copy due him, he should notify the Recording Secretary, Dr. Landon B. Edwards, Richmond, Va.

The Spring and Summer School of the University College of Medicine, Richmond, Va.,

Will be conducted by the Adjunct Faculty—Dr. Arthur Jordan, Chairman; Dr. Mark W. Peyser, Secretary; Dr. J. Mettauer Winfree, Treasurer. The Session of 1897 will begin April 30th—the day after the Commencement exercises—and will continue through June 18. The purposes of this school are to help students in their review studies of the winter session of the University College, so as to better prepare them for Examinations for Advancement to higher classes next fall; to show them clinics in small classes, so that each student will feel a personal interest in the conversational form of acquiring practical information; to prepare candidates for examination by Army or Navy or State Boards of Medical Examiners, whether of Virginia or any other State. Students being in smaller classes will have even better opportunities than in winter sessions for examination of patients in the College dispensaries and clinics of the teachers; while they will also have all the laboratory privileges, etc., accorded students in the winter course. The system of teaching will be largely by close quizzing from text-books, by clinics, by laboratory work, etc. To many practitioners, this spring and summer course will be a valuable post-graduate review; to those about to begin the study of medicine, it will afford an excellent opportunity to gain an insight into the students' life that lies before them; while to those who are already students of medicine it will afford all the advantages of private or personal pupilage. This course will also prove of service to matriculates in other Colleges who, however, wish to pursue their studies systematically until the hot weather of summer begins.

The New York University-Bellevue Hospital Medical College

Is the name of the consolidation of the New York University Medical School and the Bellevue Hospital Medical College, which the daily papers say was authorized at a special meeting of the Board of Regents on 8th inst. The Faculty of the new college will number 116 professors, lecturers, adjuncts, instructors, etc.

Dr. F. S Harker,

Acting Professor of Chemistry, Toxicology and Medical Jurisprudence in the University College of Medicine, Richmond, Va., during the present session, declines election to the chair for the next session because of bad health. The vacancy will be filled at an early day.

University College of Medicine, Richmond, Va.

During the session now nearly ended, there have been 274 matriculates. The crowding of some of the lecture halls early in the session compelled the advertisement that no more students could be received. At the Faculty meeting April 6th, it was determined to make extensive additions to and improvements in the buildings, to be ready for the accommodation of patrons next fall.

The *Alumni Association*, Dr. Edwin L. Hobson, President, Dr. Frank Hancock, Secretary, etc., will hold its annual meeting in the College Building at 12 o'clock, April 29, when Prof. Wm. S. Gordon will read a paper on "Heredity as an Etiological Factor in Diseases." The fourth annual *Commencement exercises* will be held that night. Hon. Walter Clark, of Raleigh, an Associate Justice of the Supreme Court of North Carolina, will deliver the address of the evening. At a late hour, a banquet in honor of the graduating classes will be given by the Faculty and Alumni Association.

Semi-Centennial Meeting of the American Medical Association.

The semi-centennial meeting of the American Medical Association, which will be held in Philadelphia on the 1st, 2d, 3d and 4th of June, 1897, bids fair to surpass, in the character of the entertainment, the scientific papers, and the number in attendance, any meeting which has heretofore been held. The committee in charge have been able to obtain large and roomy places of meeting for the general meetings and the section meetings, all within a single block, and within very short walking distance or immediately adjacent to the largest and most comfortable of the Philadelphia hotels. For the week preceding and following the meeting, the Committee of Arrangements have also arranged for clinical courses which will be open without charge to all physicians who may visit the city at that time. These courses cover every branch in medicine and its specialties, and will afford visitors the opportunity of seeing the active clinical work of all the great teachers of Philadelphia, which has been for so many years the medical centre of the United States.

Dr. W. T. Oppenhimer,

Professor of Hygiene and Preventive Medicine, and Clinical Professor of Skin Diseases in the University College of Medicine, because of his duties as President of the Richmond City Board of Health, has resigned his position in the Faculty.

Medical Association of Georgia.

The Forty-Eighth Annual Session will be held in Macon April 21–23. Dr. Geo. H. Noble, Atlanta, President; Dr. R. H. Taylor, Griffin, Secretary; Dr. H. J. Williams, Macon, Chairman of Committee of Arrangements. The official programme announces the titles of fifty-seven papers to be presented, and, in addition, states that Drs. Joseph Price, of Philadelphia, Samuel Lloyd, of New York, Hunter McGuire of Richmond, and W. E. B. Davis, of Birmingham, Ala., will read papers. A good rule of this Association is that "No member shall be allowed more than twenty minutes in which to read a paper; discussion by any member not to exceed five minutes."

American Medical Publishers' Association.

The Fourth Annual Meeting of the American Medical Publishers' Association will be held in Philadelphia on Monday, May 31st, 1897 (the day preceding the meeting of the American Medical Association). Editors and publishers, as well as every one interested in medical journalism, cordially invited to attend and participate in the deliberations. Several very excellent papers are already assured, but more are desired. In order to secure a place on the program, contributors should send titles of their papers at once to the Secretary, Chas. Wood Fassett, St. Joseph, Mo.

Medical Society of State of North Carolina.

On account of the numerous letters received from members of the Society who desire to attend the meeting of the American Medical Association, at Philadelphia, on June 1, 2, 3, and 4, 1897, the date of the Forty-Fourth Annual Meeting of the Medical Society of the State of North Carolina, at Morehead City, *has been changed* to June 8th, one week later. If members have sent to friends invitations to attend the meeting, advise them of the change of date. Dr. Robert D. Jewett, Secretary, Wilmington, N. C.

Medical College of Virginia.

It is currently reported that several important changes will occur in the Faculty of this College. Advantage will be taken of the resignation of Dr. Long to divide his chair in two, so as to have a distinct Professor of Diseases of Women and one of Diseases of Children. Other important changes have been made, which will be announced on Commencement night, April 22d. The past session is spoken of as the most prosperous one since 1865.

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Original Communications.

REMARKS ON APPENDICITIS.*

With a Report of Twenty-Six Cases Operated on During the Past Twelve Months.

By HUNTER McGUIRE, M. D., LL. D., Richmond, Va.,

Professor of Clinical Surgery, University College of Medicine, Richmond, Va.

Mr. President and Gentlemen of the Medical Society of Georgia:

First, let me thank you for the kind invitation of your distinguished President, which gives me the pleasure of being with you to-day and the honor of reading a paper before your Association.

For a time I was at a loss to know what subject to select, but finally concluded that it might prove of interest to report my work in appendicitis for the past year, and to discuss a few practical points connected with the disease. An analysis of the 26 cases reported will show that 19 were of the chronic form, and 7 of the acute; that 13 occurred in males and 13 in females; that 25 recovered and 1 died.†

So much has been written on appendicitis that I do not propose to discuss the subject systematically, but simply wish to give my views briefly on several questions in which there are still legitimate differences of opinion, and thus invite a general discussion of the subject on the part of the Society.

1. *The Importance of Operating for Appendicitis During an Interval Between Attacks.*

All of the 19 cases of chronic, or relapsing, appendicitis embraced in the present report recovered. In looking over my record book for previous years, I find that I have operated on 33 other cases with only one fatal result, thus making a total of 52 consecutive operations for this form of appendicitis, with one death. It is only fair to add that one of my cases was operated on for me by Dr. Joseph Price, who generously came from Philadelphia to do the work, which for some personal reasons my son, Dr. Stuart McGuire, and I wished to avoid. The results I have obtained are no better than many other operators have had, and I attribute my success largely to the fact that, if possible, I operate during the quiescent stage, as Mr. Treves originally suggested in 1886, when danger of sepsis is passed and inflammatory symptoms have disappeared. The danger is practically nothing if the surgery is clean. If you will carefully read some of the reports of my cases, you will see that I sometimes wait, and possibly, in a few instances, with some risk to the patient, until the acute symptoms pass off, and sufficient time has elapsed for all inflammation to disappear. This requires generally two or three weeks, and during this period of waiting I keep the bowels freely open, attend carefully to the diet, restrict exercise by confinement to room or bed, and give $\frac{1}{30}$th of a grain of bichloride of mercury three or four times a day as an intestinal antiseptic. In this way I have been able to tide the patient over the acute stage in a number of cases, and to operate during the interval between the attacks.

2. *Symptoms which Determine the Safety of Postponing Operative Interference Until the Acute Stage has Passed.*

When we remember that fully one-half of all the cases of appendicitis recover from the first attack; that spontaneous resolution takes place when peritonitis, exudation, and sometimes even suppuration, have been present; and that a large number of cases which recover without an operation in the primary attack remain well and have no recurrence of the disease, the question of when to operate or not to

* Read before the Medical Association of Georgia April 22, 1897.

† In all these operations I have been assisted by my son, Dr. Stuart McGuire, who, in many of the cases, did most of the work, Dr. E. L. Hobson gave the chloroform; Dr. Frank Hancock, of St. Luke's Home, and Drs. Chas. M. Edwards and R. H. Woolling, of the Virginia Hospital, were also assistants.

operate is a very nice, difficult, and always an important one.

I agree with Wyeth, that if you have a competent surgeon, one skilled in abdominal work, and the patient can be operated on within twelve hours of the first symptoms of the attack, 99 per cent. will be cured. But we frequently see the cases after these twelve hours have expired, and surgeons of experience in such work are not always within call. I confess I am not in favor of an operation in all cases as soon as a positive diagnosis is made. Too many of them get well and stay well, to warrant it, and others can be made to wait, and have the operation done during an interval between the attack, when the inflammatory symptoms have almost if not quite disappeared, the danger of sepsis has been passed, and the risk of death from an operation is almost practically *nil.*

When the attack is sudden and severe, the pain intense, pulse rapid, temperature high, respiration short and thoracic, abdomen hard and distended, face pinched and anxious—especially if the group of symptoms have been ushered in with a chill—the only hope for life is an operation, and the sooner the better. Such a case is called a fulminating one (it comes on like an explosion), and we are not warranted in waiting an hour to try medicinal remedies. In such cases, if, along with other symptoms, there is shock, perforation will almost certainly be found, and the chances for life are very slight even with an early operation. Fortunately such cases are very uncommon, but it is just such cases that have made some good surgeons say, "Operate in all cases, and at once, when the diagnosis is made." It is these fulminating cases that have produced a panic among the lay people, and have struck terror among many practitioners of medicine. I have seen during the past year but one case of perforating appendicitis; the man was moribund when I was called in, and no operation was attempted.

When the symptoms are presented more slowly and less severely, when the pain is not so great, abdomen flat, pulse, temperature and respiration nearly normal, little or no swelling or hardness in the right iliac region, then there is no such reason for haste. We can safely wait for some hours and watch the progress of the case, and this watch should be most carefully made. Of all the cardinal symptoms the temperature is the least reliable, and, in many cases, should be the least considered. The nausea and vomiting, and the effect of the disease on the sympathetic system, is often so profound as to keep the temperature down to almost normal. In cases No. 17 and No. 25, the temperature was 99°, and yet I found in each the appendix dead, and so rotten that it was difficult to handle it without tearing it. But it is important to remember that while the absence of high temperature is no indication that serious mischief is not going on, the presence of a high temperature, say 102°, shows that serious changes are probably taking place. The most important symptom to note is the pulse; it is what we use to call the "abdominal pulse"—small, thready and frequent. As the case improves, the pulse gets less frequent and less small, and, *vice versa*, when the inflammation grows worse the pulse gets more frequent. In appendicitis, a pulse of 120° is a sign of great danger. When the pain grows worse, the pulse faster, and, possibly, the temperature higher, and rigidity of muscles over the inflamed spot greater, the case is growing worse.

3. *Value and Limits of Saline Purgation.*

In an ordinary case, not a fulminating one, after a short time the pain abates, the fever lessens, the pulse gets slower, the abdomen less hard and tender, and all the urgent symptoms more or less subside—they do not disappear, but are less pronounced. And then there comes in a remedy which, in my hands, has been as certainly valuable for good as quinine in malaria or arsenic in neuralgia; that is, saline purgatives, given in frequent doses until the patient is freely and repeatedly purged. The copious and numerous watery operations "bleed" the bowel and peritoneum and lessen the congestion or inflammation. I have watched case after case during this period of lull in the symptoms, in grave doubt whether the exudate would be taken up and resolution of the inflammatory product occur, or whether it would continue on to suppuration or gangrene, or both, and have seen the former rapidly follow free saline purgation.

If the disease continues after the purging, the abdomen is left in a better condition for a future surgical operation. I am always glad, in any abdominal or pelvic surgery, to know that my patient has been well-purged and that the bowels are empty. If, after free purging, the pain continues, the pulse is rapid, the belly tender, an operation should be done without further delay. Some surgeons are strongly opposed to the attempt to purge, and in some cases rightly so. In fulminating appendicitis, an attempt to purge would most likely fail, and the purgative add materially to the trouble; and to try to purge a case when pus or

gangrene was present, would be simply silly and mischievous; but to denounce saline purgation in every case, is as wrong in principle and in fact, as to demand operation in every case as soon as the diagnosis of the disease is made.

4. *Relative Frequency of the Disease in the Two Sexes.*

From the reports of many surgeons we learn that appendicitis is much more common in males than in females—the proportion stated being one to four. This has not however been my experince. In the cases for the past year, which I present to-day, it will be seen that thirteen were females and thirteen were males, and this has been about the proportion of all my cases, amounting now to one hundred and fifty-five, the cases being nearly equally divided between the two sexes. At one time, say ten years ago, it was believed that the female was almost exempt from inflammation of the vermiform appendix. Lately, however, more and more cases have been seen in that sex. There is certainly no difference in the anatomy, physiology, or pathology of the organ in the two sexes to account for its greater frequency in the male. The additional little artery—sometimes but not always found in the female, and supposed to give better nutrition to the appendix in that sex—will scarcely explain the difference. By some it is ascribed to injury to the appendix by the psoas muscle in the male. Is the relation of this same muscle in the female so markedly different? I think not. Frankly, I am at a loss to know how to explain my record. I know that I am no better, and in many eases not so good, a diagnostician as some other surgeons; and yet I cannot help sometimes thinking that the very aggressive gynecologists—and I beg to assure any of them present that I mean no offence—have taught us so much about ovaritis, salpingitis, tubal pregnancy, and so forth *ad infinitum*, that the hard-working honest practitioner is led to believe that every unusual symptom of trouble about the pelvis must refer to some one or other of the female organs of generation; and I fear many a case of trouble about the cœcum and appendix has been treated for ovarian or tubular disease. Indeed, I confess to having made the mistake in more than one instance myself. In one of the cases in this report, in my ignorance I treated the patient for some months for ovarian trouble, and when at last the symptoms were so pronounced that I could no longer mistake them and I operated, I found an adherent appendix filled with pus. I think it would be well, when called on to see an obscure case of pelvic trouble in the female, not to let the gynecologist make us believe that there is nothing else in a woman's pelvis but the uterus, tubes, and ovaries. I recall a case, fifteen years ago, of a lady to whom I was called in consultation by Dr. Lewis Wheat of my city. Two days before she had been delivered of a child, and was supposed to be suffering from puerperal sepsis. She died, and as the labor had been easy and natural, it was difficult to explain the result. Dr. Wheat made a post-mortem, and found that a large abscess of the appendix had bursted during labor and flooded the cavity of the abdomen with pus.

In this connection, Case No. 21 is very interesting. This lady, married, aged 33, had been in bed for five months, suffering from frequent attacks of violent pain in the right iliac region, spreading over the whole of the abdomen. For these attacks she was given morphia by a physician then in attendance, but now dead. The attacks were so frequent, and the morphia given so liberally, that she became an opium habitué, and was miserable without the drug. She was naturally a weak, hysterical woman, and this state of mind and body, along with the opium, made it very difficult to get from her a true story of the case. I found that she was pregnant about four months (although she denied it most emphatically), and that her tubes and ovaries were free from disease. She was tender over the right iliac region, and I found there more muscular tension than upon the opposite side; there was no swelling. The point of tenderness was in the right flank on a line with the anterior superior spinous process, and not in the pelvis. An examination through the vagina of the contents of her pelvis gave her no pain. When the attacks were at their worst, she had vomiting and tympanites. When I opened the abdomen I found an inflamed and adherent appendix, with some exudate but no pus. She got well, gave up voluntarily the morphia before she left the hospital, and is now in the eighth month of pregnancy.

This is the second time I have operated for appendicitis in pregnant women. The other case was at the sixth month of pregnancy. Both cases recovered, and neither miscarried. I do not think one should hesitate to operate during any period of pregnancy, or even during parturition, if the case required it.

5. *Differential Diagnosis Between Appendicitis and Disease of the Tubes and Ovaries.*

The diagnosis is not easy when inflammation

of the right tube and ovary and of the appendix occur at the same time, as in cases Nos. 9, 13, 14, and 20. We have in both rapid pulse, rise of temperature, pain, vomiting and tympanites. There are, however, some points of difference that will often enable us to distinguish between the two diseases. *Appendicitis* begins more acutely. If it is a chronic case, there is a history of one or more former sharp and sudden attacks. Lesions of tubes and ovaries are of older date and have a history of menstrual disorder. The pain of appendicitis is acute, frequently violent, beginning over the solar plexus, radiating over the whole belly and finally settling in the right iliac region. *In adnexal disease*, the pain is dull and heavy, and never sharp and lancinating until the peritoneum is involved. The patient is more alarmed in appendicitis than in disease of the adnexa. The location of tenderness is different; in appendicitis it is on the level with the anterior superior spine; in adnexal trouble it is in the pelvis. In the latter, vaginal examination reveals the site of tenderness; in the former, you can touch and remove the organs in the pelvis without producing pain. Vomiting is more common in appendicitis. Rigidity of the muscles of the abdominal wall over the right iliac region is almost always present in appendicitis, and generally absent in inflammation of the tubes and ovaries. Indeed, the muscular rigidity and location of the tenderness, or pain, will usually decide the diagnosis; but in case of doubt I would give chloroform, and by its aid the enlarged and tortuous appendix can be felt, probably fastened in its place by adhesions; or, by a bimanual examination, we may discover disease of the adnexa. In case of pus-tube on right side, I believe the appendix, whether diseased or not, should be removed when the pus-tube is taken away.

6. *Technique of Operation.*

In fulminating cases the abdomen should be opened by a long incision, the gangrenous appendix ligated and cut off, and the belly washed out with gallons of sterilized water. Six or eight strips of iodoform gauze should be carried through the incision to different parts of the cavity. The wound should not be sutured, but every facility afforded for easy drainage. If such a case is not seen until the bowels are distended with gas, and the patient prostrated or collapsed, it is useless to operate. I have never seen a case of fulminating appendicitis without premonitory symptoms. A careful inquiry into the past history will always show former attacks, which possibly, however, at the time were not recognized.

In cases where there is a deep-seated localized abscess, it should be rendered accessible by a free abdominal incision. The abscess should be carefully walled off from adjacent tissues by pieces of gauze and then opened. The pus should be sponged out and the appendix carefully searched for and removed. The abscess wall should be dissected out and the bowels examined to see that they are intact. It is impossible to treat such cases extraperitoneally, and when you have exposed the cavity to the danger of infection, there is no more excuse for doing incomplete work than in other forms of abdominal surgery. Such a case was No. 12.

In cases where the abscess has approached the anterior abdominal wall and become adherent to the peritoneum, I simply open and drain it, and make no effort to extract the appendix if not loose, or to remove the wall. To endanger the infection of the general cavity by too prolonged an attempt to find the appendix, is not, I believe, good surgery. The temptation is sometimes right great to persist in efforts to get it, as the patient and his friends feel a sense of disappointment when told that the appendix was not found. The disappointment is almost as great as they would have when cut for stone in the bladder and told that the stone could not be found. But no amount of anxiety on their part will justify the surgeon's running the risk of bursting through the wall and exposing the cavity to infection. If the wall is broken from any cause, then, after sponging out all of the pus, I would remove it as you would do in case of pus-tubes. This was done in cases No. 12 and No. 22.

In cases of chronic or relapsing appendicitis, I do not advise an operation until the patient has had two attacks. Sometimes the inflammation which attends the first attack renders the patient free from a second attack because of some obliterating pathological change in the appendix. I make one exception to this rule—if, several weeks after the first attack, I find tenderness or induration, or both, over the region of the cœcum, I advise the patient to have the operation done at once. The operation should always be done between the attacks. In every case all adhesions should be freed, and any portion of the omentum in contact with the appendix, which is suspected of being contaminated, should be removed.

Case No. 1.—Mr. N. W. C., Richmond, entered St. Luke's March 2, 1896. Has had four attacks of appendicitis. He is a traveling salesman, and has been taken on each occasion while traveling in a railway car. Because

of persistent tenderness in the right iliac region, and fear of an attack when out of reach of a surgeon, he asked to have the appendix removed.

The appendix was found adherent to the cœcum, and fastened like a strap over the bowel; a piece of omentum was adherent to it. The adhesions were undone after much trouble, and the appendix removed. No drainage. Made a good recovery.

Case No. 2.—Miss G. M., Richmond, has had repeated attacks of appendicular colic. The pain in all of the attacks has been very violent, and on each occasion required the use of morphia. In the last seizure, morphia failed to give relief, and I resorted to chloroform, keeping her under its influence for several hours. As there was good reason why neither my son nor I should operate in this case, Dr. Joseph Price, of Philadelphia, kindly performed it for me in St. Luke's Hospital. The appendix was easily found and removed. There were no adhesions. The organ was inflamed, thickened, and at one or more points its lumen contracted. Completely recovered.

Case No. 3.—Miss R B. W., æt. 19, of Orange county, Va.; patient of Dr. Rowe. History of two severe attacks of appendicitis; the last one confined her to her bed for several weeks; never has been free from pain since last attack; had constant tenderness, with slight exacerbations of almost daily recurrence; cannot stand up straight without a sense of something pulling her down.

The appendix was adherent by its tip to the cœcum, and sharply bent on itself. Removed it in the usual way. Recovered without any interruption.

Case No. 4.—Mr. X., of Gayton, Va., admitted to the Virginia Hospital March 18, 1896; patient of Dr. R. T. Davis. Two weeks ago recovered from his third attack of appendicitis; the last attack attended by pain, fever, swelling, some tympanites; was in bed two weeks.

Operated before the class; found the appendix tortuous, enlarged, and filled with foul-smelling pus. No drainage; speedy recovery.

Case No. 5.—Mrs. J., of North Carolina; patient of Dr. Sorrell; entered St. Luke's, March, 1896. Has been an invalid for several years, with inflammation of the adnexa. Along with the constant pain accompanying this condition, has had many violent attacks of severe pain, fever, tympanites, swelling in the right iliac region, vomiting, etc. Diagnosis: pus-tubes and chronic appendicitis. Took large quantities of morphia, partly for the pain and partly from habit. Found pus-tubes on both sides, which were shelled out with some trouble. The appendix was six inches long, attached to right tube. A piece of omentum was attached to the appendix. This last was detached, tied, and cut off. The appendix was removed. Drainage with gauze for three days. Gave her ¼ gr. morphia every three hours first day after the operation, and gradually lengthened this interval. She recovered without much trouble, is well, and free from the opium habit.

Case No. 6.—Miss N. B. C., aged 17, came from a large boarding-school in Staunton, Va., and entered St. Luke's March, 1896. Her physician, Dr. Atkinson, diagnosed appendicitis. When she arrived in the hospital the right flank was hard and swollen, the legs drawn up, pulse rapid, temperature 104⅕. Her nervous condition was so bad, and she looked so like dying, that I ordered turpentine enemas, opium and hot-water cloths to her belly. She improved at once after her bowels were emptied. Day after day she got better, until in a week she was almost free from pain, swelling and fever. In the iliac region there was still tenderness and hardness. After she had been in the hospital a week, I operated and found only a few fragments of the appendix, which I scraped away. The cœcum was tightly fastened to the iliac fossa, and was loosened with difficulty. Under the cœcum was found the abscess. It was cleaned, curetted and drained with iodoform gauze. Her recovery was slow, but perfect.

Case No. 7.—Mr. A. B., aged 25; admitted into the Virginia Hospital March 29, 1896. Has had some marked attacks of appendicitis, the last one months ago. Besides the severe pronounced attacks, he has had several minor spells. While quiet, he is free from suffering, but any attempt at exercise gives pain. The tenderness on pressure is constant.

Operation before the class. Found stricture near the cœcum, lumen entirely occluded, and distal end filled with pus. No adhesions of any note; no drainage; speedy recovery.

Case No. 8.—Mr. W. W. B, of Charleston, W. Va., railway conductor, was admitted to St. Luke's Home March 8, 1896. He has had two violent attacks of appendicitis, attended with pain. Both attacks came on very suddenly when he was on his way from his boarding-house to take charge of his train. The attacks were attended by great pain, requiring free use of morphia. He had high fever in both cases. The tenderness in the right iliac region still continues. I find on palpation a well-marked induration in the iliac region with great tenderness. I operated on him March 12th; found

the appendix very large and long, down in the pelvis and attached closely to the pelvic walls. I had to peel it out with my finger as I would a pus-tube. Indeed, it felt to my finger very much like the ordinary pus-tube. When I brought it out of the wound, there came out with it a piece of omentum fastened to it so tightly that in separating it, I ruptured the tube, and some slight amount of pus escaped. Fortunately, it was then on the outside of the abdomen. The whole structure seemed to be deprived of peritoneum, so that I could not make a flap of the serous membrane to cover the stump. I tied it off and applied very freely to its exposed surface the thermocautery. Introduced some gauze drainage and closed the wound. His physician was Dr. Tinker, of Athens, Ohio. His recovery was complete.

Case No. 9.—Mrs. F. W. M., of Richmond, aged 37, was admitted into St. Luke's April 10, 1896. Has had attacks of pain in her right iliac region for twenty years. At one time I believed the trouble was ovarian, and treated her with electricity, the local use of iodine, and internal administration of anodynes and alteratives. Lately, the attacks have resembled appendicular colic, and she insists that the pain is different in character from that she formerly had. The appendicular attacks have been coming at shorter intervals and more severe; none of them, however, attended with fever until the last attack, when she had marked fever, rigid abdominal walls and great pain; the attack lasting for a week. Indeed, she never got over the last attack, as she had constant pain and stiffness in the right iliac region. I operated on her April 10th; found the appendix fastened to the omentum and to the right broad ligament. Its attachments were strong, and I had to dig them out with the blunt end of a pair of forceps. When removed, the lumen of the appendix was found occluded about half way from its tip to the cœcum, and contained in its free end half a drachm or more of bad-smelling pus. The right fallopian tube was large, inflamed, and red, and the ovary had undergone some cystic degeneration. The tube and ovary on that side were removed. The left tube and ovary were sound; no drainage; recovery uninterrupted.

Case No. 10.—Mrs. C., aged 30, admitted to Virginia Hospital March 10, 1896; has had repeated attacks of appendicitis. The last one kept her in bed for six weeks. Operation done before the class; appendix enlarged and thickened and fastened to cœcum; made two holes in the cœcum in dissecting it away, which were closed with fine silk sutures. Appendix contained two hard concretions like cherry stones, but were really composed as usual of fæcal matter. No drainage; recovery uneventful.

Case No. 11.—Mr. S. S. D., of Macon, Ga., aged 20, was admitted into St. Luke's Home April 25, 1896. This gentleman had a violent attack of appendicitis eighteen months ago while in London, with perityphlitis, which kept him in bed for two or three months. He was exceedingly ill there, and at one time his physician thought he would die, but he improved sufficiently to be put on the steamer and brought home. About eight months afterwards he had a second attack at Macon, Ga., about as severe as the first. Since that time he has had repeated attacks of pain in the region of the cœcum, necessitating sharp purging and occasional application of leeches, poultices, etc. He came to see me six months ago, and was so entirely free from any remnants of the former attacks that I decided to let him alone and sent him back home. After he returned home, however, he had several pretty sharp attacks, and came back. After reaching Richmond he stayed with his sister, and again for a month was free from any soreness in that region. A day or two after, however, great soreness came on, and his suffering was very severe. I opened his abdomen April 25th, making the incision over the cœcum. Found the cœcum intimately adherent to the iliac fossa and evidence of great inflammatory deposit there. The ilium for several inches was fastened to the cœcum and attached by bands to the posterior abdominal wall. All these attachments were broken up and the appendix was found in its usual site, but nothing but the stump was left. No trace of it except this little projection of about half an inch could be found. At this writing, May 1st, he has not had a bad symptom. The operation occupied one hour and twenty-five minutes. His physician was Dr. Mettauer, of Macon, Ga.

Case No. 12.—Mr. D. P. S., of Staunton, Va., aged 38, was admitted into St. Luke's Home May 20, 1896. Acute appendicitis. Was taken ill on May 16, 1896. Suffered terribly on the 17th, 18th, and 19th. Came to me on the 20th saturated with morphia, of which he had taken frequent hypodermics. Fortunately, he had been pretty well purged. He had all the symptoms of the formation of an abscess of the appendix.

I operated that night; found the appendix gangrenous and sloughing, and a large abscess, which I peeled out as you would do a

common pus tube; sprinkled iodoform thickly in the site of the abscess cavity, and drained with both glass tube and gauze. His recovery was slow, but complete.

Case No. 13.—Mrs. O. S., of Richmond, Va., aged 20, was admitted to the Virginia Hospital October 10, 1896. She had been an invalid since the birth of a child some months previous, and suffered pain over the region of both ovaries, that on the right side being the most constant and acute.

The abdomen was opened to remove the diseased organs, and the appendix was also found to be involved. It was thickened, inflamed, and adherent to the right fallopian tube. The tubes, ovaries, and appendix were all removed, and the patient made a quick recovery, and has since remained free from symptoms.

Case No. 14.—Miss K. R., of Richmond, Va., aged 28, was admitted to the Virginia Hospital November 28, 1896. History of gonorrhœa, and several attacks of peritonitis. Ovaries tender and tubes as large as sausages.

When the belly was opened and numerous adhesions separated, the appendix was found fastened to the right ovary and buried in a mass of lymph. It was removed, along with the diseased adnexa, and found filled with muco-pus. Prompt recovery.

Case No. 15.—Mrs. W. R., of Looney, Va., aged 40, patient of Dr. Givens, was admitted to the Virginia Hospital December 19, 1896. She had an ovarian tumor, which distended the abdomen to the size of a woman pregnant six months. An operation for the removal of the cyst found the appendix firmly adherent to its walls, and distended with muco-purulent contents. The tumor and appendix were both taken out, and the woman recovered and went home well.

Case No. 16.—Mr. I. J. M., of Richmond, Va., aged 30, was admitted to St. Luke's Home January 6, 1897. He has had repeated attacks of appendicitis, some of them violent, and attended with fever. The last one was about four weeks ago, and the most severe one he had had.

I opened the abdomen; found the cœcum and appendix bound down with innumerable adhesions. I had to dig out the appendix with my fingers, and sometimes to use the scissors and knife. Pus found in it. He did not do well after the operation. He took chloroform so badly that at one time I had to raise the window and give him fresh air. The weather was cold, and he took cold on the table, and for a few days was threatened with pneumonia. He had a violent, persistent cough, jerking in this way at the stitches so that every stitch-hole suppurated. In this way the healing was delayed. His recovery was slow, but complete.

Case No. 17.—Mr. J. L., of Richmond, Va., aged 35, was admitted to St. Luke's Home January 6, 1897. He had repeated attacks of appendicitis,, without knowing what the trouble was. He is a patient of Dr. William S. Gordon, who called me to see him in consultation on the night of the 5th of January. From the patient's report and that of his wife that night, he seemed to be better than he was the day before. He is a phlegmatic individual, and difficult to get any information out of; so Dr. Gordon and I decided to let him alone a few hours longer. In coming out of the house with my hat and overcoat on, I met the step-mother, who told us that he had a severe chill about 3 o'clock in the morning of that day, followed by intense fever; this succeeded by a drenching sweat, this by complete ease and sleep—information that we had not been able to get out of the patient or his wife, we then decided to operate at once. He was removed to the hospital, and the operation was at once performed.

The appendix was enlarged, and about as big as my index finger, soft, containing fæcal matter and pus, with patches here and there of mortification. I shelled it out of its bed without bursting it, and removed it in the usual way, applying the thermo-cautery to the stump, and dusting the site that the appendix had occupied in the cavity thickly with iodoform. The man was septic from the dead and dying appendix; showing it by his rather rapid pulse, yellow skin, and delirium at night. Purging, however, got him out of this, and he made a good recovery.

Case No. 18.—Mrs. M. L., of Huntington, W. Va., aged 45, was admitted to the Virginia Hospital January 9, 1897. She has had numerous attacks of relapsing appendicitis, distributed over the last fifteen years, and was thoroughly incapacitated for work. She was operated on in a public clinic, and the appendix, which was found inflamed and adherent, was removed. She made a tardy convalescence, owing to an attack of grippe; was discharged from the hospital after six weeks, and is now well.

Case No. 19.—Mrs. J. G. D., of Tennessee, aged 21, was admitted to St. Luke's Home January 16, 1897. This lady had been married a month, and was on her bridal tour through Florida when she was suddenly taken with appendicitis, and her husband brought her to Richmond.

I operated on her the evening of January 16. This was certainly the third, possibly the fourth, attack the lady had had. Found the appendix

matted down by many adhesions. I removed it, however, without much trouble. It showed marks of old and recent inflammatory changes. Recovery uninterrupted.

Case No. 20.—Miss J. C., of Childrey Store, Va., age 20, was admitted to the Virginia Hospital January 16, 1897. She had suffered great pain in right side for years, and was bedridden.

She was operated on before the class, and the appendix and right ovary found inflamed and amalgamated. Both organs were removed, and the appendix was found constricted at its base and filled with a gelatinous material. Easy convalescence.

Case No. 21.—Mrs. N. J., Staunton, Va., aged 36, was admitted to St. Luke's Home January 21, 1897. She has been confined to bed for six months with attacks of abdominal pain. Her physician felt compelled to use morphia very freely, and she soon refused to do without its daily use. She had a child two years ago, and no special trouble at its birth. She denies being pregnant now. Complexion is like a piece of leather, is emaciated to the last degree and scarcely speaks above a whisper; lives on beef extracts and suffers almost constantly with nausea; has occasional attacks of violent pain, located usually about the umbilicus. The attacks are accompanied with vomiting and tympanites; no more tenderness over one iliac region than the other, but very marked increased muscular tension on right side.

Made the opening in the middle line, as the diagnosis was not clear; found uterus three months pregnant, tubes and ovaries sound, and appendix bent, swollen and filled with stinking pus. Recovery was uneventful. She gave up the morphia habit, and is now well and in the eighth month of pregnancy.

Case No. 22.—Master S. G., of Richmond, Va., aged 5, was admitted to St. Luke's Home January 27, 1897. This little boy was brought in by Dr. Stuart McGuire, with acute appendicitis.

Found the abscess containing about a tablespoonful of pus, and the appendix so rotten that it broke in a number of places on being removed. The wound was left open, no stitches used and the site of the abscess packed with iodoform gauze. He did well for twenty-four hours, then became restless and was beyond all control—crawled all about the bed—laid on his back, side or belly, as he pleased. He was purged the day after the operation by a dose of calomel. The second day we gave him one-sixteenth of a grain of morphia, which was repeated at short intervals, and he presently became quiet. Discharged February 13, well.

Case No. 23.—Mr. L. R., of Island Ford, Va., aged 20, was admitted to St. Luke's Home February 6, 1897. He has had two severe attacks of appendicitis; the last one came on while he was in Basic City. Treated by his local doctor with opium and sent to me, as the case was subsiding. When he reached me I waited a few days for all inflammatory symptoms to disappear and all danger of sepsis was passed.

I opened the abdomen February 12th and found the appendix fastened down by a large number of adhesions; bowels were adherent one to the other, but the adhesions were easily unloosed and undone. The appendix was occluded, inflamed and contained a small quantity of pus. No drainage. Recovery was without interruption. His father, Dr. Richards, of Rockingham county, writes me that he is well and at work.

Case No. 24.—Mr. H. C. W., of Lynchburg, Va., aged 25, was admitted to St. Luke's Home February 8, 1897. He had five attacks of appendicitis; last one about three or four weeks ago. Each attack seemed to get more and more violent. Slightly tender now over the region of the appendix.

Operated on him Friday, February 12th. Found the appendix adherent; had to dig it out of a mass of imflammatory deposit. The appendix was enlarged, with stricture; contained a large quantity of bloody, bad-smelling, dark-looking fluid. No drainage. His recovery was complete.

Case No. 25.—Mr. C., New Haven, Conn., aged 30, was admitted into the Virginia Hospital February 16, 1897. He is a patient of Dr. Edward McGuire; was taken ill three days ago with violent pain, tenderness and muscular rigidity in right side, tympanites, etc. His physician purged him fully with Epsom salts and the symptoms abated. In a few hours the pain returned; pulse was rapid, face anxious, muscular tension decided.

Operated at his physician's request; found appendix swollen, enlarged, dark and gangrenous in places. It was filled with black, stinking fluid of some kind. At the time of operation temperature was 99°. So urgent was this case considered that I decided to operate at 2 P. M., and not wait for his father, who was expected to arrive in Richmond at 7 P. M. the same day. Gauze drainage was freely used, and a large part of the wound left open. His recovery was uneventful.

Case No. 26.—Mr. G. was admitted to St.

Luke's Home February 27, 1897, with an acute attack of appendicitis, which had been going on for fourteen days. I was out of the city, and the operation was deferred until the day after he arrived in the hospital.

Found on opening the abdomen such a mass of disease as I have never seen before in such cases. The appendix was not certainly found. Cut away a mass from the omentum which was supposed to contain the appendix with inflammatory deposits, but I was not sure of it; the parts were so disorganized that I could not tell. Separated a number of adhesions, and packed with iodoform gauze for drainage, but the sepsis under which he was laboring when I operated continued, and after six days he died. The death of this man was due to procrastination.

HOSPITAL CLINICS VIS COLLEGE CLINICS.

By C. R. BURKS, M. D., Sherwood, Va.

There are two systems now in operation in our large cities for affording information to the student of medicine—hospital clinics and college clinics.

Of all the preliminary branches of medical education requisite to fit the student for his future duties as a practitioner, none should sustain a higher rank in his estimation than that of clinical or bed-side instruction. It is the great instrument for training him to future usefulness. To be able to recognize the different aspects of disease, to know when interference is unnecessary, if not hurtful, to know how to wield the various appliances and resources which science has so amply placed in his hands, are qualifications which he can only acquire through attentive observation, patient industry, and practical familiarity with disease.

No lectures, however able, no amount of reading, however great, can ever supply the place of such experience to him. He may, it is true, when transformed by his diploma into a physician, go forth to his calling without such knowledge; but if he has a right sense of the awful and sacred responsibilities entrusted to him, and be actuated only by such motives as should influence the honest practitioner, how humiliating will frequently be the sense of his own incompetency, how deep and sincere his regret that he was denied or made no use of such advantages during his student life.

The student who takes the hospital ticket, visits it twice weekly, the two hours of each visit being equally divided between surgery and practice of medicine; where the class is too large to be admitted into the wards, lectures and operations take place, instead, in its amphitheatre—such cases as are required by the physician or surgeon being successively brought in there. It is much to be regretted that the large size of classes in this country renders it generally necessary to give this instruction in the amphitheatre, rather than in the wards. It must also be allowed that hospital instruction bears too small a proportion to didactic teaching. Insufficient, however, as such instruction is it possesses advantages which can never be obtained by any other mode, the student being afforded by it the opportunity of seeing acute cases of disease, fevers, phlegmasia and recent accidents, the principle of what his future practice will mostly consist; of following a case until recovery or death takes place, and in the latter instance, of having the advantage of the autopsy. The other plan of clinical instruction, which, in comparison with the one just described, may be termed the modern system, has also two hours devoted twice weekly in the college edifice for the same purpose. The difference between the two being that in this latter instance, the medical cases are generally chronic, reside at their own homes and may or may not call for future advice.

Such cases as require surgical interference are operated on before the class, and, if severe, are then removed either to rooms in the building or else to some contiguous house. And let me here observe that the students of some institutions avail themselves of both of these plans of instruction. Where there is no requirement, however, for a hospital certificate for graduation, as is the case with some colleges, but few of their pupils attend the hospital, the great majority naturally contenting themselves with their own college clinics.

The objections just urged against the hospital plan—excessive size of the class and infrequent attendance—are equally applicable to the college plan of clinical instruction.

In addition to these objections there are other evils appertaining to it sufficient, I think, to justify the alarm, if they do not deserve the reprobation, of the whole profession.

The nature of these evils, which pertain chiefly to the surgical clinic, and from which the student, the patient and the character of the profession are all liable to suffer, will now be briefly discussed. It is, I believe, acknowledged that nearly all students prefer the practice of surgery to that of medicine. Its points of interest are more prominent, it appeals more to the sense, and calls less upon the reflective

faculties, than do the invisible, complicated and often obscure operations of internal disease. It is also more exciting. The polished and glittering knife, the well-filled tray, the resolute and self-reliant operator, the prostrate patient with his cries of agony stilled by the anæsthetic, the flowing blood, and finally the triumphant result, present a tableau, which, repugnant though it may be, has a terrible fascination for the young beholder. Is there no fear that, in the excessive prominence and frequency of these displays, operative surgery, the most subordinate of all the branches of that science, may obtain an importance in the minds of students to which it has no legitimate claim; which it has been, in fact, the hope and study of modern science to prevent? Do not such exhibitions cultivate a taste for the knife to the exclusion of more correct surgical principles? May not their frequent exhibition, also, render the tender mind of the young student callous and indifferent to the sufferings of his fellow creatures? Is not, in fine, the noble science of surgery degraded, rather than elevated, by the under importance attached to such displays?

These are questions which I shall leave to the hearts and understandings of my readers.

I would not be understood as denying that some information may be obtained by even distant inspection of operations. The question is whether these, when placed in the foreground of clinical instruction, are not calculated to produce most erroneous impressions upon the mind of the students. The student is not, however, the only sufferer by this system; it is very possible that the patient may also be injuriously affected by it. Is there no temptation, for instance, for the surgeon to operate immediately whether the subject is in a condition or not, for fear some rival establishment may get the case; or when such interference is not feared and the patient is secured, that he may sometimes be kept waiting a long time, and until a more favorable opportunity for display may have arrived? Have there not been such instances?

May not the natural desire, also, to render the clinic interesting, induce the surgeon to perform operations, which in his private practice he might consider unadvisable?

Professors are not infallible. They are but men with judgments very apt to be influenced by their interests; quite as prone, also, when running a race of competition, to forget everything but the excitement of the chase.

Serious as are the objections just stated, sufficient in themselves alone to condemn the whole system, they are as nothing in comparison with the injurious effects exerted and reflected by it upon the character of the profession at large.

When those who hold the keys of our temples, the arch-dignitaries of our noble calling, to whom are entrusted the high responsibilities of educating the characters as well as the minds of their pupils, whose honors should be like Cæsar's wife, above even suspicion, descend into the arena with bricksters and charlatans by advertising their list of cases, treated and operated on in their several institutions, by performing operations gratuitously upon those who have no claim for such charity; by offering inducements, direct or indirect, to influence patients to submit to the knife, which they would be ashamed to make use of in their private practice, and by setting in motion every available means to obtain cases for their clinics; can it be expected that the lesser lights of the profession should preserve their honor and integrity unsullied.

Will they not, also, vaunt the numbers of *their* cases, the magnitude of *their* cures.

May they not, endorsed by such high authorities, employ dishonorable and improper means to obtain notoriety and practice, and plead before the bar of conscience the examples set before them? Is it a wonder that charlatanism should prevail throughout the land, or that we should be gradually sinking in our own and the community's estimation? Is there no fear, have we no right to fear such consequences?

Another serious and frequently urged complaint against this system is that it almost entirely precludes the young practitioner from obtaining that portion of operative surgery, which would otherwise legitimately fall to his share.

It is but natural that the poor, and persons in moderate circumstances, should prefer the services of him whose reputation and abilities are well known, to those of any young aspirant, however able and well prepared.

And thus the veteran professor, receiving his pay, the clinical exhibition of the case, virtually and in reality underbids his younger rival. I do not mean, of course, to detract from the merit of services gratuitously rendered from motives of charity, but the case is widely different when the surgeon receives his remuneration not exactly, it may be, in money, but in a coin perhaps even more valuable to him. The class of cases to which I have alluded would not, under other circumstances, compensate the surgeon of eminence for the time he would be obliged to devote to them. Under

the existing state of things, however, the young man who is desirous of obtaining a reasonable share of this practice, discovers that the competitor who enters the list with the *most* ardor against him, and who not only accepts willingly all such cases, but who leaves no stone unturned to obtain them, is actually at the very head of the profession. Such monopoly, it need not be said, effectually closes the door against the young practitioner.

Such are the legitimate fruits of the present system of college clinics; alike mischievous to the student and discreditable to the profession. The question is, What is to be done under the circumstances? In laying down any scheme of medical education, some regard should be paid to the established usages and forms which the necessities of our position have forced upon us. Our requirements should not therefore be utopian. Let us return to the old-fashioned, but respectable plan of hospital instruction. Let every institution in the country, empowered to grant a degree, demand a hospital certificate of its pupils. Let the hours now devoted to the College clinic be added to those already given at the hospital, thus doubling the opportunities there afforded the student, without any additional loss of his time of attendance upon lectures; and, finally, let two hours be set apart weekly to witness post-mortem examinations. Let these changes take the place of the present disgraceful and incompetent plan, and it will be reasonable to believe that the reform will be an advantageous one to the whole profession.

I distinctly disclaim the imputation that my remarks are directed against either particular institutions or individuals. They have a wider scope. As regards the faculties of our own schools, I can bear willing and cheerful testimony to their general high character. Among them are many gentlemen whose attainments, elevated professional standing, courteous demeanor, and noble liberality, have won for them the respect and love of all who know them.

As lecturers, also, in their several branches, I believe that, as a class, they are unsurpassed anywhere.

These circumstances, however, but add to our regret that we cannot exempt any of them from the stigma which is attached to every one who is connected with this system. They should reflect that no plea of self-preservation, no desire to outstrip a competitor, can ever absolve them from their responsibilities for the proper use of the powers entrusted to them. Would it could be said that they duly felt their obligations; would it could be said that all of them, that the bright legacy of confidence and respect bequeathed them by their predecessors, was still untarnished. Let him who is without blemish cast the first stone.

I have dealt at some length upon this matter, as I think it is one connected not only with the rights of students, but with the honor of the whole profession, and I hope the profession will look at it in that light. I do not enquire into the motives which prompted the introduction of the college clinic, nor upon whom the odium of its origination rests, neither shall I attempt to investigate the degrees of criminality of different institutions in this matter, but shall merely add that, did I believe that it was a necessary evil, the result of circumstances over which there could be no control, I should have spared myself the trouble of making these remarks. When it is known that any appeal has been made to the managers of our numerous hospitals, or that any other measures have been taken to increase the present means of accommodation for the students, then, and not till then, will I believe that the college clinic is a necessary evil, and not a mere advertisement—whose chief results have been to dazzle and ensnare the medical student.

Allow me to close with the following extract which will commend itself to the reflection of the many readers of this journal:

"The question which, after entry on hospital studies, will most engage the attention of the zealous student will be as to the relative amount of time to be devoted to the wards, to the lecture-room, and to private reading. On this point, the regulations of the examining boards are explicit, requiring certificates of attendance on practice during the whole period of study. An opinion fraught with the most mischievous consequences has, however, got about, in favor of a division of the period and the devotion of the latter part only to the acquisition of practical knowledge. It is customary to hear that 'the first year's man is not expected to attend hospital practice,' that he has enough to do with his lectures, etc. Unless they are intending to devote to educational purposes a much longer series of years than are usually so spent, we cannot do otherwise than urge upon our young friends not to listen for one moment to such advice.

"Out of the three or four years within which residence at a medical school is ordinarily comprised, not a single day should be allowed to pass without some hours of it being devoted to attendance in the wards. It is there only that the student will learn to estimate duly the

relative importance of the different subjects for which his attention is asked; it is there alone the real fitness for the duties of after-life is to be obtained."

And again let me quote: "Five or six years' attendance on an hospital will be little enough to qualify you to enter with propriety and confidence on the discharge of your professional duties. Bear in mind, gentlemen, that when you come to treat diseases, you approach the bedside as physicians or surgeons, and not as chemists, botanists, anatomists, or bacteriologists. This is the character in which you are to appear, and to the acquisition of knowledge which will prepare you for the discharge of its duties you ought to apply your chief attention."

And again: "I would not be understood to depreciate any department of human knowledge; far be it from me; besides, the attempt would be useless. But I am anxious that you should concentrate all your energies on the proper objects of medical pursuit, and devote the largest share of your attention to those acquirements which render you good practitioners."

The student may probably object to the recommendation to begin hospital practice at once; that without a knowledge of anatomy and physiology, he is at a loss to understand the diseases which come before him; and that while ignorant of the principles of therapeutics, the cures he sees made teach him no useful lesson.

To this I answer, that the attempt to supply knowledge before the need of it has been felt is always attended by much waste of labor. It is far better, for instance, that coincidently with the acquisition of anatomical details, the practical importance of those details should be strongly felt, than that they should be esteemed only as dry, unproductive facts. The memory requires all the assistance which association of ideas can be made to give it. Who has not experienced how faithful has been his retention of any piece of knowledge for which he had long sought, or which was supplied just at a juncture when he was capable of perceiving its full weight? Just so is it with the light afforded by anatomy and physiology to him who, in his daily study of disease, is puzzled for the want of it; just so is it with the man who has attended hospital clinics when he comes to the bedside of the sick and suffering, and how his soul will rejoice when he can say truthfully—I have seen just such cases in the hospital.

A CASE OF NASAL CYSTOMA.*

By FRANK T. CHAMBERLIN, M. D., Washington, D. C.

Cystomata of the air-passages are extremely rare; therefore, I feel no apology is necessary for a short history of the following case:

Rev. N., ecclesiastic, age 42 years, some three years previous to consulting me, had noticed, while discharging his duties, that his voice would become husky at times, with a decided nasal tone, which seemed to be influenced in a measure by conditions of the atmosphere, being worse in damp, murky weather. The annoyance increasing, and partial stenosis of one side of nose occurring, he consulted a physician and a nasal wash was prescribed, which gave benefit for a time. Later on, the conditions becoming more annoying, a decided muco-purulent discharge from the nose and pharynx appeared and a muffled tone to the voice, with an increase of the stenosis of the one side, particularly on expiration, which finally became permanent, extending to both sides except on certain movements of the throat and during inspiration, when one side would become slightly pervious to air. The clearing of the throat to remove discharge became in a measure constant.

One day, while examining his throat in a looking-glass, he was aware of the presence of an abnormal body making its appearance in the pharynx on a line with the attachment of the uvula with the palate. He applied to me for treatment. An examination found the body to be an opaque, grayish tumor, tense, with slight elastic feel to touch, of about the size of an English walnut, almost completely filling the upper pharynx. The cavity of the pharynx, which was naturally large, was increased by the growth pushing the soft parts of the palate forward, causing the uvula, which was already elongated, to encroach more on the tongue, thereby accounting for the symptoms previously enumerated.

The use of the finger and probe showed the tumor to be attached high up and apparently pedunculated, with probable attachment to one of the posterior bodies. I proceeded to operate, intending to remove the sac and contents intact, if possible. The nasal cavities were sprayed out with an antiseptic solution, followed by a few drops of a 4 per cent. solution of cocaine, hydrochlorate to naso-pharynx by means of syringe through nostril to correct an over-sensitive condition set up by examination.

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* Read at a meeting of the Medical and Surgical Society of the District of Columbia, April 1, 1897.

A cleiaris snare, with pharyngeal canula threaded with No. 5 wire, was passed over the growth up to the attachment and the tumor removed intact, but on bringing it through the mouth, it slipped out of the loop and ruptured on the floor before I could catch it. The contents were liquid, semi-mucous in character, of about the consistency of thin white of an egg.

The sac or envelope was thin and tough, with small vessels over its surface. The attachment, revealed by the rhinoscopic mirror, was on the right side and the posterior portion of the middle turbinated body.

The wound was touched with chromic acid through a concealed carrier, a combination of boracic acid and iodoform insufflated, not, however, with the idea of preventing a recurrence of the growth, which would seldom or never occur, but to hasten the obliteration of a slight redundancy of the tissue left and the early resolution of the part. The stenosis of the nose and throat were at once relieved with an improvement of all catarrhal symptoms, which was completed by removal of the uvula and a short course of treatment.

These growths or cysts arise probably from the adenoid tissues of the part, either as the result of degenerative changes or from retention of the normal secretions, and consequently they seldom occur. The only other case I have ever met with was a small cyst, the size of a bean, attached between the interior and middle turbinated bones posteriorly, and was supposed to be a polypus before removal, but proved, on examination, to be a small unilocular cyst.

226 *New Jersey Ave., S. E.*

PATHOLOGY AND TREATMENT OF INTERNAL HÆMORRHOIDS BY LIGATURE, WITH CASE.*

By WM. H. PARKER, M. D., Richmond, Va.

Professor of Genito-Urinary and Rectal Surgery in Summer School of Medicine, University College of Medicine, Ex-Resident Surgeon Richmond City Hospital, Etc.

The disease commonly called piles is the most common of all human ailments, except the ordinary "colds." Yet there are unfortunately few diseases in which, as in piles, the surgeon is able to assure the patient in every case that he can positively be cured. Piles have their origin in the over-distended and varicose hæmorrhoid vessels, principally the veins modified by the mechanical violence to which their position exposes them. The vessels are very liable to become varicose—first, from the fact that valves are absent in the veins; second, because of the erect position; and third, because of the peculiar office of the rectum.

The veins immediately around the verge of the anus form a continuous network by anastomosis with the hæmorrhoidal plexus of the rectum within. These veins anastomose even in the substance of the sphincter muscle. Therefore, from the character of the veins in which they take their origin, there is no distinction between internal and external piles.

Now these veins have no valves, and, consequently, whenever the portal circulation is sluggish or an abdominal tumor, ovarian, etc., or pregnancy exists, we have a stagnation of the blood and a dilated and varicose condition of the hæmorrhoidal veins—a condition similar to varicose veins of the lower extremities, or a varicocele.

Owing to the constant erect position, is it a matter of surprise that we should find this varicose enlargement with thickened walls and pouch-like dilations?

Owing to various causes, as constipation, straining at stool, etc., this stagnation and congestion leads to an exudation, and the connective tissue surrounding the veins becomes infiltrated, and we have the morbid anatomy of the tumor. It is a veritable tumor—one that can be seen, is well defined and can be handled, is firm to the touch, and grows by plastic infiltration.

Internal hæmorrhoids are of a much more serious nature, in so far as the health of the patient is concerned, than external hæmorrhoids.

French surgeons have not accepted as true the causes of piles, ordinarily spoken of, but have diligently sought for a true predisposing cause in the anatomy and physiology of the rectum.

By numerous dissections, Professor Verneuil thinks he has discovered that cause in the peculiar distribution of the veins and the course they take in the coat of the rectum a few inches above the anus. He considers that the superior hæmorrhoidal veins only communicate with the portal system, and solely form the internal piles; external piles being formed by the inferior and middle hæmorrhoidal vessels which connect with the general venous system; that the superior hæmorrhoidal vessels commence at the upper border of the external sphincter and pass up under the mucous membrane to a certain height and perforate the wall of the gut. Where they perforate the walls of

*Read before the Richmond Academy of Medicine and Surgery, April 13, 1897.

the rectum, he claims that they pass through veritable muscular buttons, which have the power of contracting and causing stasis of the blood in the vessels.

Verneuil affirms they are not only the passive but the active causes of hæmorrhoids. The practical outcome from the above anatomy and physiology by the French author is very important, viz.: That for the cure of the great majority of internal piles, nothing is required but gentle and thorough dilatation of the internal and external sphincter muscles. The point chiefly insisted upon is that the dilatation should be thorough and include both sphincters. Allingham shows the fallacy of this method of treatment—first, from the fact that the absolute separation of the portal and general venous circulation cannot be true; second, from the fact of Verneuil having injected the superior hæmorrhoidal veins from the portal, thus forcing the injection in a direction opposite to the natural way; third, because he makes no allusion to the part that the arteries take in the formation of a pile; and lastly, the fact that the muscular buttons would really act the part of valves to support the column of blood to the liver, and in place of causing stasis, prevent it by opposing regurgitation in congestion of the liver.

The medical treatment of piles, I think, does not receive the recognition it deserves in the works on rectal diseases. Indeed, in some works, as Allingham, it receives no mention at all. Matthews, in his work, says he does not believe that hæmorrhoidal diseases can be cured in any other way than by operative procedure; yet, Thomas, in the *London Lancet*, formulates a set of rules for the medical treatment of piles, claiming that a strict observance of them will cure the great majority of cases which have now to be operated on. He refers to both varieties, but more particularly to the internal.

Dr. T. Lauder Brunton, in the *British Medical Journal*, on the treatment of piles, says: First, keep the liver in a condition to maintain a free supply of blood through it. For this purpose, insist on moderation in food and stimulants. Occasional small mercurial purgatives, followed by a mild saline, alum in small doses and castor oil do good. Exercise is useful in keeping the liver free, but this exercise must be of a certain kind. Both blood and bile have a tendency to stagnate in the liver; but this stagnation is lessened by the liver being rhythmically squeezed between the diaphragm and abdominal muscle. Brisk horse-back exercise, either trotting or cantering, or touching the toes with the fingers, the knees being kept straight, is excellent exercise. A regular action of the bowels is of the utmost importance. The best time ordinarily for emptying the bowels is after breakfast, but if the piles have a tendency to come down, it is better to empty them every night before going to bed. The patient should take with him a bottle of hamamelis and some prepared sheep's wool. A small pledget of the wool should be inserted sufficiently to be grasped by the sphincters. This acts locally as a support to the piles, while hamamelis is healing and stopps hemorrhages quickly.

The treatment of piles by the ligature is a time-honored surgical procedure. It owes its present prominence to Allingham, and is often described as his operation, though the treatment by ligature is veryold. In the opinion of Allingham, of England, Wyeth, Matthews and others, in this country, it is the safest, easiest and best operation.

The following case will illustrate the method:

Mr. B., white, aged 35, consulted me in October, 1896. Had been a sufferer with piles for years. In January of 1896, had been operated on by injection of carbolic acid, only to leave him worse off than before. He complained of severe pain in his rectum all the time with protrusion of a large mass whenever he had an action. On examination, a large mass protruded on bearing down, consisting of four large vascular tumors. Patient was weak and anæmic from repeated losses of blood at each defection. He was told that an operation would cure him, to which he consented.

Preparatory treatment consisted of two C. B. pills followed by a dose of Epsom salts the next morning, and repeated again the following morning with an enema before the operation. Chloroform was administered, and patient placed on his back with legs drawn up and held by an assistant. The sphincter was then thoroughly dilated with my thumbs and the bowel everted. Each tumor was seized with a pair of forceps and pulled down forcibly. A curved needle with a double thread was run through the base and clipped. The mucous and muscular coats were cut around the base and ligature tied as tightly as could be drawn. In this way, there is no pain after the operation. The piles were then clipped off, leaving sufficient base to hold the ligature. By clipping the base, you will hasten the slough and your patient makes a quicker recovery. Each tumor was treated in the same way. The rectum was then irrigated with a solution of bichloride 1 : 4000, stumps replaced and a pack-

ing of gauze inserted. Dressings were retained by a T bandage, and patient put to bed and given a hypodermic of morphine and atropine.

That evening he had retention of urine, which was relieved by a soft catheter, and patient spent a comfortable night.

On third morning bowels were moved by enema of warm water without any pain or protrusion, and bowel irrigated with an antiseptic solution. Patient was ordered to take wine glass of Apenta water every morning, which acted admirably, and the following prescription given:

℞.—Hydrarg. chlor. corros.....gr. j
Tr. gentian comp.
Tr. cinchonæ.....āā f ℥ij

M.—Sig. Teaspoonful in water three times a day.

Bowels moved every day, ligature came away from 7 to 10 days, and patient was discharged as cured in two weeks.

Correspondence.

Prof. Robert Koch's Latest Discoveries—His "New Tuberculin"—Its Preparation and Effects—Its Ameliorating Power in Tuberculosis—Possibly it is Curative in Early Stages of the Disease.

I, Langesderichts, Strasse 12,
Vienna, Austria, April 10, 1897.

Editor Virginia Medical Semi-Monthly,
Richmond, Va.:

Dear Doctor,—I have before me a recent edition of the "*Deutschen Medicinischen Wochenschrift,*" containing the promised contribution from Dr. Robert Koch about his "*New Tuberculin.*" Although his publications some six years ago generated hopes that have since proved to a great extent fallacious, one cannot but look towards the later utterances of this renowned bacteriologist with an interest born of his undisputed reputation as the acknowledged scientific authority on such subjects; and I feel that you and your readers will be interested in what he has to say.

In the present paper, he states that he has uninterruptedly continued his experiments in the employment of cultures of tubercle bacilli for the treatment of tuberculosis, and that he has now arrived at sufficiently definite conclusions to justify a publication of the results obtained. "The finished production of this work," he says, "continued for years, will seem simple and in many respects self-evident; but any one who has worked about bacteriological laboratories knows how troublesome and time-taking these experiments are, and what a trial they are to one's endurance and patience. And I take this opportunity to gratefully acknowledge the indefatigable and faithful assistance of Dr. M. Beck.

"The employment of bacteria and their products for curative and preventive purposes is, in the end, always a matter of immunization; and I believe it desirable to give, briefly and precisely, my position as to the questions involved, to prevent being subsequently misunderstood.

The immunity against infective diseases was originally held to be something comparatively simple, but at length we have come to understand that it may be very complex. It will be best to illustrate by some examples. Behring and Kitasato have shown that animals can be immunized against tetanus. For this purpose, one uses the infiltrated liquids of cultures—*i. e.*, the products of tetanus bacilli soluble in water, in which is found the specific tetanus bacilli. Against this poison, or rather against very great doses of it, the immunized animals are protected, but only for a limited time. The immunization has no influence on the tetanus bacilli themselves, which vegetate in the immunized body as much as their anærobiotic growth permits, without hindrance. We deal here with a simple and pure ptomaine immunization, and, it is possible, that if this artificial immunity has disappeared after a few weeks, the always further produced tetanus poison regains the virulence of which it has been temporarily deprived, and the animal dies of tetanus without having been reinfected by tetanus bacilli.

"The opposite condition is found in cholera and typhus. The experiments of Pfeiffer with these diseases have proved that the animals immunized by fresh agar-cultures are protected against the living bacteria, but not against the poison produced by these bacteria. The living cholera and typhus bacteria perish in the immunized animal's body in a surprisingly short time, but we have not succeded in immunizing animals above a certain dose of poison. In this case, the immunity is a purely *bacterial* one—*i. e.*, one directed exclusively against the bodies of the bacteria.

"The ideal immunization will always be one that protects the animals or the human body, not only against one of the many injuries incident to pathogenic organisms, but against all of them. These considerations play an impor-

tant rôle in tuberculosis. Upon first thought, it appears that surely there can be no immunity against tuberculosis, as it can last for years in the human body without diminishing man's receptivity for it. Even in those cases where healing takes place, the man is not protected against a new invasion of tubercle bacilli. Experience teaches that he has, on the contrary, become more susceptible to fresh tuberculous infection. And yet, there are indications that tuberculosis also, under certain conditions, admits of a kind of immunization; indications that are derived from observations which one can make of miliary tuberculosis in man and of experimental tuberculosis in the guinea-pig, where generally a time comes when the tubercle bacilli (which were visible in great numbers in the earlier stages) disappear so completely that one is compelled to look very carefully in order to detect any remaining. This is very striking, as we will see further on that the tubercle bacilli, when experimentally injected into the body, are absorbed very slowly. It seems that in these cases we have an immunizing process that is a purely bacterial one. Unluckily, it comes too late to be of any use. But these observations have been sufficient reason for me to seek persistently after a method which would effect a state of immunity in an earlier stage of tuberculosis, when it would be of material use.

"The two processes above mentioned have one thing in common, viz: the body is overpowered in a short time by tubercle bacilli. This circumstance seems to me to be the explanation of the fact that a pronounced immunity is not obtained under ordinary conditions. The usual course is that the tubercle bacilli grow slowly and only in a small number of the organs or tissues of the human body. They generally find themselves surrounded and cut off by necrotic tissue, and it is only a long time after they have died, and after they have probably undergone chemical changes, that they are absorbed. Where the tubercle bacilli grow luxuriantly (for instance, in caverns and on the surfaces of mucous membranes), they are unchangedly thrown off and not absorbed, and no immunization can take place under such conditions. This immunization only occurs when numerous tubercle bacilli, as with miliary and guinea-pig tuberculosis, spread quickly through the whole body and enter into interchanging effect with the living tissues.

"In the effort to obtain an artificial immnnity conditions had to be striven for which should, as nearly as possible, coincide with those above indicated. But, at once, insurmountable difficulties opposed themselves. All efforts to make absorbable the unchanged living, or even dead, tubercle bacilli, in sufficiently large quantities, from the subcutaneous tissues of the abdominal cavity or from the blood vessels failed, and other experimenters have succeeded as little as I. If subcutaneously injected, the dead tubercle bacilli invariably cause pus, and they can be found for months, in the abscesses thus caused, in great numbers and capable of being colored. If injected into the abdominal cavity of experimental animals, they are a little better absorbed, and I have succeeded in effecting distinct immunity in this way. But it invariably caused circumscribed inflammations with their consequences, such as adhesions of abdominal organs, intestinal obstructions, etc., from which a large per cent. of the animals died. Dead tubercle bacilli, injected into the circulation of trial animals, caused the same tubercular nodules in the lungs that the live ones did; and in these nodules for a long time one finds unchanged tubercle bacilli. Therefore, I concluded that the absorption did not proceed in a desirable way.

"After thus satisfying myself that the tubercle bacilli, in an unchanged state, were useless for purposes of immunization, I tried to make them absorbable by chemical alteration. For this purpose, the bacilli were treated with a solution of mineral acids, or with strong alkalies at boiling heat. In this manner, I succeeded, it is true, in so altering the tubercle bacilli that they were absorbed, in sufficiently large quantities, entirely from the subcutaneous tissue. But evidences of immunity did not occur, and it is to be supposed that this chemical action effected such a radical change on the bacilli as to entirely destroy its immunizing quality. I next tried an extract of the absorbable portion of the bacilli, rejecting the solid mass. First, I tried a glycerine extract, which led to the discovery and subsequent use of 'tuberculine.'

Tuberculine has the highly valuable quality of causing a characteristic re-action when subcutaneously injected into man or animals sick of tuberculosis. This quality renders it of practical use in the diagnosis of tuberculosis in its earliest stage; a stage when its recognition by physical examination is impossible, but when there is most hope of therapeutic success. The employment of this agent as a diagnostic auxiliary, which I emphatically recommended in my first publication about tuberculine, has been more and more substantiated by time. It is employed to-day in most of the civilized world for the early diagnosis of cattle tubercu-

losis. The organized fight against this widely disseminated disease is the outcome of the recognition and use of tuberculine, and has already been crowned by great success. The many thousand injections that have been made on cattle for this purpose have proved how unfounded was the fear that, in consequence of the re-action, the tubercle bacilli would be made mobile and would be sent to healthy parts of the body.

"This agrees entirely with my own experience in its employment in more than a thousand cases for the early diagnosis of tuberculosis in man, of which Dr. Nietner will make a detailed report. In these cases, there was never the slightest reason for supposing that the tubercle bacilli were made mobile.

"In view of these facts, one should finally abandon the foolish prejudice of the tubercle bacilli being made mobile, and should utilize the diagnostic power of tuberculine to defeat the disease in man, as is being done in the struggle against cattle tuberculosis. In this connection, I can only repeat what I have said at an earlier opportunity, that in tuberculosis prophylaxis is infinitely more important and advantageous than all therapy.

"The further usefulness of tuberculine consists in its employment in the treatment of tuberculosis, as after each tuberculine re-action an unmistakable amelioration of the tuberculous process is observable. It lay very near me to continue the re-action as long as amelioration was called forth, but this cannot be done without limit. Slowly the capability of re-action disappears, and at the same time of course the effect of the tuberculine; until, finally, there is a complete *immunization against tuberculine,* which may last for several months. This immunization has no influence upon the tubercle bacilli themselves. It is a pure ptomaine immunity, but not a bacterial one. Unfortunately, the capability of re-action from tuberculine disappears before a cure has taken place. But the return of the disease is to be again treated with tuberculine, as soon as capability of re-action recurs. In this way, one who possesses the necessary skill and persistence can effect considerable amelioration in a great many, if not in all, cases of uncomplicated tuberculosis. Believing this, I should have continued to think tuberculine the best of all agents at our command against tuberculosis, if I had not more recently succeeded in making a preparation from cultures of tubercle bacilli possessing real immunizing power against bacteria.

"Among the many experiments made with a view to obtaining a bacterial immunizing substance, which were afterwards discarded, there is one I should like to mention which occupied me for more than a year, and which is very instructive. The preparation was an extract of tubercle bacilli, obtained by 10 per cent. normal natron-langes. The tubercle bacilli were well mixed in the liquid, left for three days at the temperature of the room and occasionally agitated. Then the liquid standing over the culture masses was filtrated through blotting paper and finally neutralized. The liquid thus obtained was clear and slightly yellowish, and was not entirely free from tubercle bacilli. It contained sufficient of them for from five to ten bacilli to be seen on the field of the microscope in an ordinary covered-glass preparation. But they lay always single, never in masses, indicating that they were certainly dead, which I had already ascertained from previous experiments, finding that they invariably died when subjected to a 10 per cent. solution of normal natron-lange for from twelve to fifteen hours. This preparation, being an alkaline extraction, for the sake of brevity was designated "T. A." (Tuberculine Alkaline). Experiments made with T. A. proved that, when given in very small doses, it caused re-actions identical with those of tuberculine, only the re-actions were of a little longer duration and the capability of re action extended over a longer period of time. But the chief thing observed was that the effects obtained from it proved to be more constant and permanent than those caused by tuberculin. Relapses were less frequent and longer deferred. But with this preparation was an injurious effect that forced me finally to abandon it. Upon reaching certain (it is true they were pretty large) doses abscesses formed at the point of injection—abscesses which were perfectly sterile, and which could only have been caused by the dead bacilli contained in the preparation. From this time on the liquid was filtered through clay cells, and thus the tubercle bacilli were entirely removed from it.

"That at certain doses of T. A. abscesses invariably occur, I believe to be a significant and an important fact, viz: That we cannot expect the patient to accustom himself to immunization against the tubercle bacilli prescribed in their original form and injected subcutaneously. In the beginning, I injected the smallest doses of this preparation, which could have contained very few tubercle bacilli, and they were well absorbed. Then I gradually increased the dose until, after twenty or thirty injections, the larger doses were reached and

abscesses were caused. If it were possible for the human body to become tolerant of greater quantities of tubercle bacilli, it ought to have here occurred. But this did not happen, clearly because the subcutaneous tissue is able to cope only with a very small number of dead tubercle bacilli. If one should wish to introduce a large quantity of tubercle bacilli in this way, one must make a number of injections in different portions of the body, which is clearly impracticable.

"These experiences with T. A. suggested the idea of destroying the tubercle bacilli mechanically, as they were by no means satisfactorily absorbed when intact; and, if possible, to disintegrate them so completely that they could be easily grasped by the absorbing elements of the body. In this idea I was sustained by observations which I had made with reference to the chemical conduct of tubercle bacilli. At the before-mentioned experiments to reduce the tubercle bacilli to a soluble condition by mineral acids and strong alkalies, I found that the bacilli contained two characteristic chemical bodies belonging to the unsatiated fat acids. One of these fat acids is soluble in weak alcohol and easily saponified by natron-lange. The other is soluble only in boiling absolute alcohol or ether, and is very difficult of saponification. Both accept the so called tubercle coloring; that is, are dyed intensely red by carbol-fuchsin, and retain this color after being subjected to a weak saltpetre acid and alcohol. As the first of the two fat acids is soluble in alcohol, it is easily extracted, so that at the process of coloring employed subsequently on the tubercle bacilli, only the second fat acid, insoluble in cold alcohol, remains. This fat acid fixes the coloring material, and is therefore the bearer of real coloring of the tubercle bacilli. By using hot natron-lange, one can drive the fat acid slowly out of the tubercle bacilli, and, with the assistance of the microscope, one can easily follow the process of separation, and watch the fat acid as it passes out from the bacillus in the form of little colored drops that flow together, forming large drops. Meanwhile, the bacilli keep their original shape, but no longer retain the characteristic coloring of the tubercle bacilli, but only that of the other bacteria. These fat acids form, as the microscopic image of the colored bacilli teaches, a continuous layer in the body of the bacillus. They protect it against exterior violence, and explain the difficulty attending its absorption. The point, therefore, is to destroy this protecting envelope if the tubercle bacilli is to be made absorbable.

"My first attempt in this direction failed. Every effort, by pressure and grinding, to reduce the mass to powder form left the tubercle bacilli intact. It was only when I took well dried cultures and worked on them, without mixing, in an agate mortar with an agate pestle for a long time that I could observe that the dyed tubercle bacilli diminished in number, until finally only a few bacilli remained intact. In order to get rid of these, I mixed the mass thus pulverized with distilled water and subjected it to a very strong centrifugal motion. (Four thousand revolutions to the minute, for from one-half to three-quarters of an hour.) The mixture then separated into a perfectly clear and transparent upper layer, which was whitely opalescent and which contained no bacilli; and into a tenacious, slimy residuum, which was dried again, then worked in the mortar and again centrifugated as before. It yielded then equal quantities of a clear upper layer and a thick residuum. This manipulation could be continued until finally the residuum consisted only of impurities, such as cotton fibre, dust, etc., which had been originally in the culture or had afterwards entered by chance. In this way the whole mass of tubercle bacilli was easily changed into a perfectly clear liquid. This experiment, which everybody can repeat without difficulty, was the starting point for my subsequent studies.

"Next, I convinced myself, by experiments on animals and afterwards on man, that the preparations obtained in this way were perfectly absorbable and never caused abscesses, provided they were well contrifugated and no longer contained colorable tubercle bacilli. I proved that the first obtained liquid (the upper, clear transparent layer) was the one which differed materially from the others, which are practically identical. I have designated this upper layer, obtained after the first centrifugating, 'tuberculin O.,' (abbreviated to 'T. O.'), while the liquid obtained by working out the remnants left after the first centrifugating, I have called 'T. R.' A microscopic examination of the residuum after the first centrifugating, shows that the bodies of the tubercle bacilli are not changed into a uniform substance. Upon subjecting it to carbol-fuchsin or methyl-blue, one no longer sees any red-colored masses or little drops of fat acid, but in your microscopic field there are palely-colored, cloudy formations which are seamed with little dark blue drops that heap themselves especially towards the edge. After the separation into the liquids T. O. and T. R., one finds the violet cloud-like formations in

T. R.; the blue-colored masses in T. O. Another difference consists in the fact that the addition of 20 per cent. of glycerine does not change T. O., but produces a fleaky-white precipitate in T. R., over which remains a perfectly clear liquid. I shall report on another occasion other interesting chemical differences.

"Their conduct with reference to glycerine goes to show that T. R. contains especially those parts of the tubercle bacilli which are insoluble in glycerine, and therefore are incapable of extraction by glycerine; while T. O. contains the parts soluble in glycerine. With this supposition, agrees the experiments made with the two preparations on animals and man. T. O. stands very close, in its qualities, to the ordinary tuberculin. Its effects coincide nearly entirely with those of the T. A. before mentioned, except that with T. O. no formation of abscesses is to be feared, but it also has but little immunizing power. T. R., on the contrary, effects decided immunity; it also causes reactions in tuberculous patients if too large doses are employed, but its power is entirely independent of these reactions, while in using the ordinary tuberculin and T. A. and T. O., reactions *must* be called forth in order to inaugurate a healing process. In employing T. R., I try to avoid reaction and endeavor as quickly as possible (though exercising all possible care), by gradually increasing the dose, to make the patient tolerant of large doses of the remedy; that is, to immunize him against T. R., and thereby, as I believe I have the right to infer, against the tubercle bacilli themselves.

"That T. R. contains all that is of immunizing value in the cultures of tubercle bacilli, is evidenced by the fact that a man who is immunized by T. R. reacts no more upon great doses of the ordinary tuberculin; which is proof conclusive that T. R. immunizes against all component parts of the tubercle bacillus. I state this effect of T. R. because it seems to me very important, in such a great number of cases, that no doubt should exist about the correctness of this observation.

"If T. R. is to exhibit its full effectiveness, some unavoidable conditions must be fulfilled in its manufacture. First of all, not every tubercle culture is suitable for the preparation of an efficient T. R. By experiments which I have recently made, with the assistance of Dr. Vagedes, and which will be published later, I have convinced myself that tubercle bacilli are not as uniformly virulent as we have generally believed. There are very important gradations in the virulence of even freshly-bred cultures. Those cultures that are far removed, by having passed through successive culture liquids, have, as a rule, lost much of their virulence. One should employ highly virulent cultures for the preparation of T. R. The little virulent cultures furnish little effective, or even entirely ineffective, preparations. They must not be too old, and they must be worked as quickly as possible. The drying must be done in the vacuum-exsiccator, as other manipulations easily work such changes that the substance becomes less soluble, and, at the same time, less effective. Especially are all chemical manipulations, however small, to be avoided as much as possible, as T. R. seems to be peculiarly sensitive to them. For the same reason the cultures which are to be worked out, as well as the prepared liquids, are to be carefully protected from the light. The cultures must be worked as fresh as possible—*i. e.*, immediately after they have become perfectly dry, as any delay injures them for this purpose. Not more than about one hundred milligrammes can be worked with the hand, and great practice and skill are necessary to deal successfully with even this quantity. A sufficient separation of T. R. and T. O. has only been effected when the perfectly clear T O. has taken up at least 50 per cent. of the solid substance. Otherwise, a more or less quantity of T. O. remains in T. R., and one gets undesirable reactions after injecting. He who wishes to work at the making of T. R., must remember that highly virulent, living tubercle bacilli in a dry state are to be manipulated in such a way that the formation of dust cannot be avoided. I believe the danger incident to it is no small one, and I must admit that I felt, at these experiments, as if I had to do with explosive materials. I have not used a respirator, because it did not seem to offer sufficient protection. It could not prevent the dust of the bacilli from depositing itself on my clothes and flying about the room. For these reasons, I do not believe it possible to manufacture T. R. in large quantities by hand. Only large manufactories, with the help of especially adapted machinery, can produce a uniformly good preparation in quantities sufficient for all demands, and successfully avoid the dangers incident to its preparation. The color works of Messrs. Lucius and Bruning, at Hachst-on-the-Main, have decided, on my suggestion, to make the machinery necessary for manufacturing it on a large scale, and they will sell the preparations T. R. and T. O. prepared exactly after my directions.

For the purpose of preserving the liquids, 20 per cent. of glycerine is added, which, according to my experience, sufficiently protects

them against putrefaction without impairing the solubility of T. R.

"The method of determining the proper dose of the preparation is a very simple one. The injections are made, as with tuberculin, with a well-sterilized syringe into the subcutaneous tissue of the back. The liquid contains, in a cubic centimetre, ten milligrammes of solid substance, and in employing it is to be diluted with normal saline solution (not with phenol solution). One begins with .05 milligrammes, and this is such a small dose that it is exceptional for a reaction to take place. If this should occur, you must further dilute it. The injections are made every second day with such a gradual increase of the quantity that a rise of temperature beyond half a degree centigrade is to be avoided if possible. If there is any greater rise of temperature caused by the injections, they must be discontinued until it entirely disappears. I have, as a rule, increased the dose until twenty milligrammes was reached, and then, if no reaction occurred, have discontinued them entirely, or only injected after a considerable interval.

"If one would immunize animals one gives from the first as much as they can well absorb. For instance, from two to three milligrammes to the guinea-pig, and in proportion to larger animals. With tuberculous animals one must, of course, begin with much smaller doses, since doses of two milligrammes can be fatal under such circumstances.

"I will restrict myself here to some brief remarks as to the effects to be had from T. R., contributing a report about this later, when I will especially go more into detail about the treatment of patients. In the immunizing of healthy animals and the treatment of sick ones all depends on subjecting them to as big a dose as possible. Of course, they must be so measured as to insure perfect absorption, a matter which is easily determined by the conduct of the places at the point of the injection. By observing these conditions I have succeeded in immunizing a large number of guinea-pigs so perfectly that they supported inocculations with virulent cultures without being infected. The places at which the inoculation was made disappeared without a scar, and the inguinal glands adjoining were in many cases, for months after the inoculation, entirely unchanged; in others they became slightly enlarged, but without tubercular involvement. We could find no tubercle bacilli in them.

"In a number of animals immunization was not completely effected at the first inoculation. In such cases I found the inoculation wound healed, but the inguinal glands were cheesy. The internal organs, on the contrary, were free from tuberculosis. At the same time, the control animals showed far advanced tuberculosis of lungs, spleen and liver. I believe that a still lower degree of immunity existed at the time of inoculation in cases where only the lungs of the trial animals proved to be tuberculously affected. Meanwhile, liver and spleen exhibited only traces of tuberculosis or were entirely free from it. This condition, except in these cases, I have only seen with tubercular guinea-pigs which were treated with the ordinary tuberculine, but in a too advanced stage. With guinea-pigs whcih had received injections of T. R. it often happened that tuberculous infections occurred, and without exception a more or less retrogressive change was noticed in the organs already tuberculous at the commencement of the treatment. This was seen especially in liver and spleen. In the liver there were no necrotic, yellowish colored foci; instead, one saw furrows and depressions on the surface, which gave a characteristic nodulated appearance to the organ. The spleen, at the same time, showed shrinkage to such an extent that in some cases only a very small portion of the organ remained, and which could only be found after careful search. My impression, derived from these experiments, is that the immunization takes place about two or three weeks after reaching the maximum dose. Therefore a cure of tuberculous guinea-pigs, with whom this disease pursues a rapid course, succeeds only when the treatment is begun early, say from one to two weeks after the inocculation. This fact is also important for the tuberculous man, whose treatment should not be begun too late. In the beginning such small doses are given that no considerable immunization is to be expected, but when one arrives at doses from one-half to one milligramme unmistakable signs of immunization are observed, Therefore, the preparation has a limited usefulness. A man whose condition is such that only a few months of life remain will not be benefited by it. No more will one who suffers from secondary infections, especially such as are complicated by streptococci and in whom septic processes have pushed tuberculosis into the background.

"In an immunization against tuberculosis complicated by streptococci and other pathogenic organisms, which so often play such a fatal rôle in advanced tuberculosis, the influence of tuberculine, at best, cannot be immediate. Such conditions are, as a rule, to be recognized by the temperature, etc.—and expe-

rience teaches that patients whose temperature exceeds 38° C. are only exceptionally receptive for the specific treatment of tuberculosis.

"The new preparation has been employed by me on a large number of appropriate patients, and, without exception, I have obtained considerable amelioration; much greater than the success obtained from the ordinary tuberculine or T. A.

"I purposely speak only of amelioration, though, after ordinary ideas, not a few cases could be designated as cured, but I believe it premature to employ the word 'cured' before a sufficiently long time has elapsed. With *lupus* patients was it especially noticeable that the local reactions were very slight, and in spite of them a considerable progressing improvement took place. Likewise with *phthisis* there were no reactions, where, with tuberculine, there were always temporary infiltrations in the lung and stormy reactions. As a rule, in using T. R., the single local symptom was a slight increase of the crepitant râles which, however, soon disappeared. After a few injections the quantity of the sputum diminished and finally ceased, wherewith, of course, the finding of tubercle bacilli disappeared. The crepitant râles now disappeared from the diseased parts of the lungs, and the area of dullness diminished. In no case have I seen any alarming complications or other injuries to health that could be ascribed to the preparation. Nearly all patients increased in weight from the beginning, and by the end of the treatment attained to a considerable increase. Especially noticeable was the change in the temperature curves. With patients who had the well-known daily fluctuations of temperature of one or more degrees centigrades, it was noticed that the angles on the chart disappeared more and more, and gradually approximated to the nearly straight, normal line directly under 37° C.

"If my present method of injecting subcutaneously the smallest doses of T. R., and gradually increasing until twenty (20) milligrammes are reached, is the best I dare not assert, as it is possible that other methods are better and will lead more quickly to the desired end. Perhaps combinations with T. O., or with other serum preparations which have been derived from T. O. or T. R., may prove more satisfactory. Further experience must determine this; but, I am convinced that, without doubt, further improvement of these preparations themselves are not to be expected. They consist of highly virulent fresh cultures, which have been living just before, and which have been converted into a soluble condition without chemical alteration. It is not possible to make anything better in this respect, and what it is possible to accomplish with tubercle culture can be done alone with these preparations."

JAMES N. ELLIS, M. D.

Berlin, Nov. 16, 1896.

Proceedings of Societies, etc.

MEDICAL AND SURGICAL SOCIETY OF DISTRICT OF COLUMBIA.

DR. LLEWELLYN ELIOT, Recorder.

Dr. Chamberlin read a paper on

A Case of Nasal Cystoma. [See page 44.]

DISCUSSION.

Dr. Reyburn had nothing to add in comment on the report of the case. He thought this class of growths belonged to the mucous varieties.

Dr. J. Eliot said nasal cystoma is a rare growth; has never seen one unless he has classed it as a mucous polypus. A nasal cystoma resembles a polypus in appearance and symptoms. Burnett states there are about twenty cases of cystoma on record. They originate from the serous glands. He would use the cold wire snare in treating a case.

Ichthyol for Some Diseases of Women.

According to *Semaine Medicale* (quoted by *Indian Medical Record*, April 1), Gunsburg has found ichthyol, administered according to the following formula, of the greatest service in chronic affections of the genitalia, with reflex disturbances of the digestive system. Dyspepsia, constipation, abdominal pains and menorrhagia, are rapidly improved or cured with it:

℞.—Ichthyol..... 4 grams (ʒ j)
Licorice extract and powder q. s.

M.—Divide into forty pills. (He usually has them keratinised.)

S.—Take two pills three times daily.

La Grippe in Virginia.

From the April Report of the Virginia State Board of Health on prevailing diseases in each of the 100 counties of the State, we note that influenza or la grippe is prevailing in seventy counties.

Analyses, Selections, etc.

Sunstroke.

Dr. R. C. M. Page, Professor of General Medicine and Diseases of the Chest, at N. Y. Polyclinic, contributes a full paper on this subject to the *N. Y. Polyclinic*, April 15, 1897.

Definition.—Sunstroke, or insolation, is a disease characterized by more or less sudden and temporary disturbance of nerve centres from prolonged exposure to excessive heat under certain predisposing conditions.

Other names have been applied by various authors to this affection, such as heat-apoplexy, sun-fever, heat-fever, heat-asphyxia, coup de-soleil, ictus solis, thermic or thermal fever, calenture, erythismus tropicus, and heat-stroke. The term heat-apoplexy is apt to be misleading, since the disease in question bears no true pathological relation to apoplexy.

Etiology and Pathology.—Exposure to excessive heat for a certain length of time, that varies with individual cases, is undoubtedly *the immediate and exciting cause* of sunstroke. But exposure to the direct rays of the sun is not necessary to produce the disease. In fact, some of the most severe and fatal cases occur in the night time, and Bonniman states that many cases occur in India without exposure to the sun, the men being seized in the night, though apparently in good health previously.

Now, as radiation of heat with evaporation and cooling of the surface occurs more rapidly and effectually in a dry atmosphere than in one that is moist, it follows necessarily that the disease is observed more frequently in low and humid localities than in higher altitudes, or in such arid climates as Arizona, New Mexico, Dakota, parts of Texas, and the like. In New York City sunstroke occurs most frequently in the hot and muggy days of July and August. In like manner, occupations necessitating exposure to excessive heat in an atmosphere rendered humid artificially also favor its production, as in laundries and hot-houses, and, according to Swift, sugar refineries.

Patients are seized, in the majority of cases, during that part of the twenty-four hours when the thermometer ranges highest, though the attack may occur at any hour of the day or night. Thus, of sixty cases observed by Swift at the N. Y. Hosptal, three occurred in the forenoon between 8 and 11 o'clock; forty between 11 A. M. and 4 P. M.; seventeen between 4 and 9 P. M.

While exposure to excessive heat is the immediate cause of sunstroke, there are certain *predisposing etiological factors* to be considered. They all tend to weaken the inhibitory heat-centre, and subsequently affect the respiratory centre also. Hence, excessive bodily fatigue greatly contributes towards bringing on an attack. Examples of this have been observed among soldiers during forced marches in hot weather, athletes after prolonged and violent exercises, and among the laboring classes.

Anything that interferes with the free respiratory movements of the walls and diaphragm also acts unfavorably, such as heavy and tightly fitting clothing, or a full meal and indigestion with the formation of gas in the stomach and corresponding pressure upwards against the diaphragm. Impure atmosphere is also a predisposing cause, as among those who live in ill-ventilated apartments, barracks, crowded ships, and the like. Men are more frequently affected than women, for the obvious reason that they are more exposed to causes. Among races, the white people of temperate climates appear to be more subject to attacks than others. Acclimatization has considerable influence in bringing about *tolerance against the disease.* For this reason newcomers in hot climates are more likely to suffer than those who have resided there for a length of time. In like manner, the sudden onset of a heated term in a given locality favors the occurrence of sunstroke.

Alcoholic intemperance is such a powerful predisposing cause that it cannot be overlooked. It is a matter of common observation that laborers and others who are given to alcoholic excess, especially among those who drink early in the morning, are peculiarly liable to sunstroke. Heart-disease is not generally mentioned by authors, but undoubtedly predisposes to an attack.

According to Fick, the temperature of the blood of man in health is always the same by means of the controlling influence of radiation and evaporation through the lungs and skin. But if, as shown by the experiments of Obernier, this influence be interfered with by exposure to abnormally high temperature for a sufficient length of time, accumulation of heat in the body results. Following this would be an injurious if not fatal effect on the nervous system; in other words, sunstroke. Kuhne showed that where frogs were exposed to a high temperature, and an electric current was passed along their nerves, it was at first lessened and then ceased absolutely. He also showed that coagulation of myosin immediately occurs with vertebrate animals at a temperature of 113° F. Claude Bernard also

proved that warm-blooded animals exposed to excessive heat suddenly died from cardiac rigidity due to coagulation of the myosin.

Dr. H. C. Wood, of Philadelphia, as early as 1863, claimed that sunstroke is a fever, and called it *thermic fever*. His conclusions were based on Satschnow's theory that there exists in the pons a heat-centre that inhibits or controls the production of animal heat and a centre in the medulla that regulates the dissipation of such heat. Disturbance of these centres is caused by exposure to abnormally high temperature, so that more heat is produced than normally and less is thrown off. At first, the inhibiting heat centre in the pons becomes exhausted in the effort to control the formation of heat. If this be sufficiently prolonged, then the nerve-centres become paralyzed with an immediate and excessive rise in the bodily temperature, with all the symptoms of sunstroke.

Other theories of the nature of sunstroke have been brought forward by various authors, such as the dilatation of the capillaries from the effect of the heated blood on the muscular fibres of the coats of the arterioles; the sudden liberation of gases in the blood; the formation of clots in the vessels, and finally the action of a poison in the blood on the nerves and muscles. Such theories, however, have not been proven, and it is probable that the researches of the authors mentioned are more nearly correct: That sunstroke is the result of interruption of the controlling influence of radiation and evaporation, with disturbance of nerve-centres, caused by exposure to excessive heat under certain predisposing conditions.

Paralysis of the respiratory centres occurs in unfavorable cases, and is the most common cause of death. But in some instances death is very sudden and due to rigidity of the heart-muscle from coagulation of its myosin. Apoplexy may be a coincidence, but should not be considered in any sense a mode of death belonging to sunstroke, as the term heat-apoplexy sometimes given to it would imply.

Morbid Anatomy.—The blood is nearly always fluid, dark, and alkaline, though sometimes acid. The blood globules, in some instances, are crenated or notched. The lungs are engorged, as also the right ventricle and pulmonary artery. The left ventricle is usually contracted and empty. Rigor mortis sets in early. Parenchymatous degeneration of the kidneys and other organs has been occasionally observed, but this condition is more likely coincident than a result of the disease. Enlargement of the spleen is sometimes noticed, but this is not constant. Extravasations in and about the sympathetic cervical ganglia and pneumogastric nerve not infrequently occur, as well as in other localities; but it is owing to the fluidity of the blood and has no special significance. For the same reason, petechiæ over the body are often noticed. An important point is the evidence of incipient meningitis in some cases. The ventricles of the brain usually contain a certain amount of serum.

Symptoms.—These vary, as the case is mild, severe or speedily fatal. The latter is sometimes called the *cardiac variety*, owing to the sudden stoppage of the heart's action. Morehead divides them into the cerebro-spinal, which may be mild or severe, the cardiac, and the mixed varieties.

Mild cases, as observed by the author, occur in the daytime, as, for instance, among soldiers during a holiday excursion, and even among pedestrians who are not at the time in good bodily condition, and undertake during the heat of the day more than they can accomplish. Without any premonition other than that of a certain feeling of indigestion, which, with constipation and depression of spirits, frequently does exist, the patient suddenly becomes dizzy, staggers in his gait, often complains of headache and great weakness, and has nausea or even vomits. The latter often affords much relief. The pulse is quick, sharp and irregular, with palpitation of the heart. There is throbbing of the arteries in the neck. The skin is hot and pungent to the touch, though the temperature be little above normal. The face is somewhat flushed, and the patient appears dazed, often looking somewhere anxiously to micturate. If promptly attended to, the case may go no further, otherwise the severe form may rapidly set in.

The second or severe form of sunstroke may occur suddenly, or else it may be preceded by such premonitory symptoms as have already been related. Epigastric distress is often marked. Mental disturbance increases, and vision is sometimes peculiarly affected so that all objects appear to be of the same color, as blue, purple, and the like. The respiration is hurried and anxious. After a variable length of time, a few minutes or several hours, the patient becomes insensible. In some cases, insensibility comes on early, and without such noticeable premonition. Among those occurring in the night-time the patient is often already insensible when first discovered. Delirium is not infrequent. The respiration, which early was hurried and anxious, now becomes noisy

or even stertorous. The skin is usually hot and dry, and the temperature rises to 107° F., and may go up to 110° F., or even 112° F. Persistent vomiting and purging may be present, and they are very unfavorable signs. The conjunctivæ are usually injected. The pupils, at first contracted but not responsive to light, afterwards become dilated. The pulse, which was quick and sharp, now is frequent and feeble. Convulsions are not uncommon. The patient passes into a state of coma, and fæces are sometimes passed involuntarily. Should the stage of insensibility be passed out of in safety, the patient is apt to quickly recover. In about 50 per cent. of cases, however, death occurs, and is due, in such cases, to asphyxia from paralysis of the respiratory centres. In both the mild and severe forms, we observe three noticeable classes of symptoms—more or less rise of temperature, interference with respiration, and mental disturbance. In a number of cases collected at Bellevue Hospital, the lowest temperature was 99½° F., and the highest 112° F.

In the third or cardiac variety of sunstroke, death is sudden without any premonition. It is thought to be caused by stoppage of the heart's action from rigidity of that muscle, due to coagulation of the myosin, as the direct effect of excessive heat. Among children, according to Conegys, sunstroke often resembles cholera infantum, the head symptoms being more prominent, such as headache, delirium, convulsions, and coma.

Sequelæ.—Headache, exacerbating and remitting, insomnia, loss of memory, vertigo, and inability to concentrate the mind on any particular subject, are among the most common sequelæ. These are more marked on exposure to heat in summer or even an excessively warm room. Not only is the severe form liable to be followed by such sequelæ, but they are sometimes also observed among those who have experienced a mild attack of sunstroke. Not infrequently these sequelæ depend on a chronic meningitis resulting from the attack, and may be associated with obstinate gastro-intestinal catarrh, general debility, and palpitation of the heart. The patient often becomes easily fatigued on the least exertion, and there is a general loss of energy and vigor. The heart acts sometimes as it does in fatty metamorphosis of that organ, causing great apprehension on the part of the patient and inability to walk without support. These sequelæ may be transient or last for an indefinite length of time, even under treatment. Insanity and paralysis may follow sunstroke, but they are rare. Epilepsy is perhaps more frequent, but even here it is probable that a tendency to that disease existed beforehand. Disturbance of vision and even blindness have followed sunstroke. Apoplexy is a possible coincidence in this disease, but cannot be regarded as a probable complication. In fact, the term heat-apoplexy, sometimes applied to sunstroke, is misleading, the cerebral symptoms of sunstroke being due, as already stated, to the direct action of excessive heat, rather than congestion of the brain.

Diagnosis.—Cases of *exhaustion* and *syncope* occurring during warm weather, may be mistaken for the mild form of sunstroke. But in the former the face is pale, the surface cool, and the pulse frequent and feeble. There is no rise of temperature, and the patient soon revives. On the contrary, even in the mild form of sunstroke, there is always some rise in the temperature, the skin is pungently hot, the face is flushed, and the pulse well sustained.

In *apoplexy*, there is hemiplegia, and one pupil is usually more dilated than the other, neither of which conditions are observed in sunstroke. In apoplexy, the skin is usually cool at first and the temperature gradually rises, but in sunstroke, high temperature and the dry, hot skin precede insensibility. The breathing in apoplexy is slow, and expiration is usually accompanied by a peculiar puffing sound. In sunstroke, the respirations are hurried and noisy rather than stertorous. The pulse in apoplexy is slow and full; in sunstroke, quick and sharp.

The early supervention of insensibility in sunstroke usually distinguishes that disease from severe *remittent and other fevers.* The tense, hard and wiry pulse of *acute meningitis,* together with the projectile vomiting and retracted abdomen of that disease, are wanting in sunstroke. In *alcoholic coma,* besides the vomited matter and odor of the breath, the circumstances under which the patient became insensible, are to be considered. In general, it may be said that the diagnosis is not difficult, sufficient attention being paid to the conditions under which an attack occurs, and to the prominent symptoms already detailed.

Prognosis.—Sunstroke is always to be regarded as a very serious affection. For, though there may be no immediate danger to life in the mild form, yet even in these cases troublesome sequelæ are possible, as already stated. But in the severe form nearly 50 per cent. of the cases die, and the cardiac variety is uniformly fatal. Some of the patients recover

even after having had convulsions, but their occurrence is very unfavorable. Prolonged and deep insensibility, with great frequency and feebleness of the pulse, involuntary discharge of fæces, and paralysis, are usually fatal signs. Persistent high temperature, even under proper treatment, is also unfavorable. The death-rate varies somewhat with different seasons, and depends a good deal on the previous habits and condition of the patient.

Treatment — Prophylaxis.—As prophylactic measures, alcoholic intemperance is to be avoided, especially during the heated term, as also anything likely to cause excessive bodily or mental fatigue, and thereby lowering the vital powers. The bowels should be kept open by means of some mild laxative, if there be constipation, and meals should be regular. The diet should consist largely of vegetables and fresh rather than salt meat. Among soldiers, policemen, laborers and others exposed to the hot sun, wearing in the crown of the hat a moist sponge, green cabbage leaf, or other similar material, is reputed to be preventive of sunstroke. Avoidance of exposure to excessive heat, however, is the only sure means of prophylaxis.

Immediate Treatment.—For immediate treatment, the chief indication is the reduction of temperature as soon as possible and compatible with the safety of the patient. In *very mild cases*, placing the patient in the shade, unbuttoning and loosening the clothes about the neck and waist so as to allow free respiratory movements, and showering the head with cold water, are usually sufficient to bring about complete restoration. But no time is to be lost, though it be necessary to take the patient to the nearest pump or spring. Even in these mild cases, exposure to heat and fatigue should be carefully avoided as an after-treatment.

In *severe cases* it is absolutely essential that the clothing should be at once removed and the patient placed in a bath of cold water (at 60° F.) if possible, or be thoroughly showered with cold water. Dr. Guitéras' plan at Key West was to place the patient in a wet sheet at a temperature of 80° to 85° F., and then apply ice in addition. If the temperature rises again, the cold bath should be repeated for half an hour each time, or even longer. The patient should be vigorously rubbed all over the body while in the bath, after the manner of the Brand system of bathing as practised for hyperpyrexia in typhoid fever. The cutaneous friction aids in arousing the nervous system to resist the depressing effects of the fever. In many instances, a few baths suffice, but in others they have to be given for several days. Rubbing the head and body with blocks of ice is done in Bellevue Hospital with much benefit. Ice water may be sprinkled from a watering-pot, as the shock of many small streams of cold water will often arouse the patient from coma. Cold water enemata are also given; but the application of cold should not be continued too long, as it may cause depression and collapse. For this reason, affusion with water at a temperature not lower than 68° F., as in typhoid fever, rather than refrigerating the patient with ice, is recommended as equally efficaceous and certainly less dangerous. The best guide is the temperature and the pulse, and they should always be closely watched. With or without the application of cold, medicines have been used to reduce temperature. In Philadelphia, for instance, during the heated term of 1885, antipyrin was administered hypodermically in fifteen to thirty grain doses, not only without harm to the patient, but even with apparent benefit. The depressing effect of this drug upon the heart, however, should not be overlooked, and its use should be restricted to those severe cases where ordinary means fail or are not at hand. Phenacetin in ten grain, or antifebrin in three grain doses by the mouth is safer, but their action is usually too slow and uncertain to be of much value. The hypodermic injection of quinine has been reported upon favorably in some cases by Hall, of India, but in doses sufficient to appreciably lower the temperature, it acts unfavorably on the cerebral symptoms.

Should convulsions occur, Maclean, Barclay, and others recommend the inhalation of chloroform, especially in those cases where the bath and showering are ill-borne, and there is great nervous irritability. But great care should be had in the use of chloroform in these cases for fear of suddenly and fatally depressing the heart. A much better and safer plan is the hypodermic injection of morphine—say ten minims of Magendie's solution (= two grains opium) for an adult.

Moving the bowels with some drastic purgative, such as croton oil placed on the tongue, was formerly much in vogue, but this was owing to ignorance of the true pathology of the disease, rather than from any benefit derived from its use, the supposition being that sunstoke was of the nature of cerebral congestion and apoplexy. Yet in some cases it might be tried, if there were reason to believe that the bowels were overloaded, in a patient with strong pulse and good heart action.

The same may be said about venesection and

the administration of large doses of bromide of potassium. Flint, however, mentions several cases that recovered after general blood-letting in Bellevue Hospital, in 1864, and S. Weir Mitchell is cited by many authors as proving the beneficial effects of venesection in a few cases where the pulse was full and strong and insensibility not profound. The practice is quite common in the New York hospitals at the present time, in specific cases in which either convulsions or pulmonary œdema threaten.

According to Pepper, venesection is only to be considered when the case is sthenic and apoplectic symptoms persist after the bodily temperature has become lowered, but not before. Under these conditions it may abort or relieve meningitis.

On the other hand, the administration of stimulants may become necessary, as evidenced by the feeble pulse and heart's action. A tablespoonful of whiskey or brandy in a little milk or water may be given by the mouth every two or three hours, or by the rectum if the patient cannot swallow or if it is not well borne by the stomach. In some cases the author has given a half drachm of ether hypodermically as required, with the result of strengthening the heart temporarily. But the idea of giving stimulants in sunstroke in a general way is also based on a mistaken pathology of the disease, confounding it not with cerebral congestion and apoplexy, but with heart-exhaustion and collapse. In the latter condition stimulants are urgently indicated, but in sunstroke the chief indication is rather the reduction of temperature. This may vary, according to a number of cases collected, from 99½° to 115° F. The author's experience leads him to believe that the hypodermic administration of digitalis is more trustworthy than alcohol for strengthening the heart in sunstroke. A drop of the fluid extract in ten minims of water may be injected every three hours, as long as the exigency of the case may require. Strychnin and nitroglycerin are also of great benefit, given hypodermically.

The lungs should be watched and physical examination of them should be made from time to time in order to guard against congestion and œdema. As soon as such a condition occurs, as evidenced by râles, especially posteriorly and low down, no time is to be lost, but dry cups should be applied at once. It is now that venesection or drastic cathartics may be of use, but usually, the extensive application of dry cups over the back is sufficient, and it may be well to repeat them from time to time as required.

Soon after the return to consciousness the patient often complains of severe headache. In such cases the application of a blister to the back of the head and neck is indicated and is generally serviceable. In some instances, however, it is not of the least benefit. Bromide of potassium is useful, or better still, the bromide of sodium, the latter being usually better borne by the stomach and more readily digested. If the pulse be fairly strong, a small amount of veratrum viride may be added.

℞.—Tincturæ veratri viridis.....min. x
Sodii bromidi.. .....ʒ xij
Aquæ, q. s. ad.. .....f ℥ ij

M.—Sig: Shake well and take a teaspoonful before meals and at bedtime.

If the pulse be weak, the fluid extract of ergot may be used instead of the veratrum.

℞.—Sodii bromidi.....ʒ xv j
Extracti ergotæ fluidi..... ℥ j
Aquæ, q. s. ad..... .....f ℥ ij

M.—Sig: Take one teaspoonful three times a day and at bedtime, in a tablespoonful of water.

During the summer of 1866, and for several years subsequent, bromide of potassium in large doses was administered in cases of sunstroke at Bellevue Hospital, New York, and evidently with the idea, as already stated, that it relieved congestion and lessened the tendency to apoplexy. Much more recently, the bromides have been found to be of little or no benefit except when used after return to consciousness and severe headache is present as above stated.

The *chief features in the treatment* of sunstroke are:

(1) The reduction of temperature by cold affusion or ice or both, with or without the aid of antipyretics as may be required;

(2) The control of convulsions by the hypodermic injection of morphin rather than by inhalation of chloroform;

(3) The employment of cardiac stimulants or venesection as may be indicated and the relief of congestion of the lungs by means of dry cups and drastic cathartics;

(4) The administration of ergot rather than bromides, and application of blisters to the back of the neck during convalescence if cerebral symptoms point to commencing meningitis.

In the *treatment of sequelæ* repeated and long-continued counter-irritation by means of blisters on the back of the head and neck, and the use of ergot rather than bromides, as above stated, are indicated when the symptoms point to chronic meningitis. For the dyspeptic symp-

toms, which are sometimes very annoying and cause palpitation with great depression of spirits, the author has found the following prescription exceedingly serviceable:

℞.—Bismuthi subnitratis..... ʒ ij
Pulveris digitalis.....gr. vj
Pulveris belladonnæ.....gr. iij
Pulveris aromatici.....gr. xij
Misce, et fiant *cachets* no. xij
Signa: One three times a day after meals.

Tonics containing iron and strychnin, together with electricity, are useful in many instances. For the treatment of other sequelæ, such as epilepsy, insanity, and paralysis, the reader is referred to those subjects. In the after-treatment of all cases, the patient should have due regard to general health and regular habits, and avoid exposure to heat if practicable. For this reason removal to a cool climate during the summer months may become necessary.

Medical Treatment of Uterine Fibroids—Thyroid Extract—Glycerin Injections.

According to *Maritime Medical News*, April, 1897, Jouin has been treating uterine fibroids by the *internal administration of thyroid extract.* He says it causes a marked reduction in size of fibroids, while pain, pressure, general weakness and especially hæmorrhage, are entirely relieved. He says it also causes a diminution of menorrhagia in women at the climacteric.

The same journal quotes Cheron as speaking highly (*Rev. Internat. de Med. et de Chir. Prat.*) of *intrauterine injections of sterilized glycerin* in cases of uterine fibromyoma. A little over a drachm is slowly injected every two or three days into the uterine cavity, the vagina being subsequently tamponed with cotton or gauze, saturated with boroglyceride. The effect of the drug is to cause dryness and atrophy of the endometrium, and hence diminution of the tumor. A marked decrease in the flow is observed at the following menstrual period. The ease and safety of this method of treatment should recommend it in cases where operative interference is inadvisable, or is refused.

For External Piles and Ulcers of all Sorts

Nitya Lall Chowdhuri, V. L. M. S., Assam, says (*Indian Med. Rec.*, April 1, 1897) the following is excellent for *external piles and ulcers of all sorts:*

℞.—Acid. tannic... .....ʒ ij
Zinc. sulphat.....ʒ ss
Morph. hydrochlorat .....gr. viij
Vaselini
Unguent. simplicis.....āā ʒ ij
M.—Make ointment.
S.—Apply *q. s.* frequently to the piles.

Without morphia, the same ointment may be used with success for all sorts of ulcers.

Dr. Lewis H. Adler, Jr., for *external hæmorrhoids* prescribes (*Med. and Surg. Rep.*, quoted by *Maritime Med. News*, April, 1897):

℞.—Fld. extr. hamamelis.....ʒ j
Fld. extr. hydrastis
Comp. tinct. benzoin.....āā ʒ ss
Tinct. belladon.....ʒ j
Carbolized olive oil (5 per cent. carbolic acid) .....q. s. ʒ iij
Mix.—S.: Apply often to the parts.

Histological Differentiation Between Sarcoma and Carcinoma.

Synopsis used in laboratory work by E. R. Le Count, M. D. (*Corpuscle*, April, 1897:

SARCOMA.

1. Stains uniformly, because all the tumor is one kind of tissue, viz., mesoblastic tissue. Exception—certain rare mixed cell sarcomata do not stain uniformly.

2. Blood vessels are atypical and embryonal with walls made up of tumor cells—more properly, spaces or sinuses.

3. Cell characteristics: Spindle cells, giant cells, small or large round cells, the nuclei of which occupy the main portion of the cell.

4. Cell nests do not occur or at least the stroma is present between the cells.

5. No tubules.

6. No pearls.

CARCINOMA.

1. Stains non-uniformly, because there are two kinds of tissue, the pre-existing and the invading; the invading epithelium, being more embryonal, stains more deeply.

2. Blood vessels occur in the stroma; they are not usually newly formed, but pre-existing. As a rule, they resemble mature blood vessels, even though they are new formed vessels.

3. Cell characteristics: Spindle cells are rare, and giant cells still more so; usually the cells show small nuclei with a relatively large amount of cell protoplasm.

4. Cell nests are the rule—cells surrounded by connective tissue which does not penetrate between the individual cells.

5. Tubules—in columnar cell carcinoma.

6. Pearls—in stratified cell carcinoma.

Book Notices.

Practical Treatise on Diseases of the Skin. *For the Use of Students and Practitioners.* By J. NEVINS HYDE, A. M., M. D., Professor of Dermatology and Venereal Diseases in Rush Medical College, Chicago, and FRANK H. MONTGOMERY, M. D., Lecturer on Dermatology and Venereal Diseases, Rush Medical College, Chicago. New (fourth) edition. 8vo. of 815 pages, with 110 Engravings and 12 full-page Plates, 4 of which are colored. 1897. Lea Brothers & Co., Philadelphia and New York. Cloth, $5.25; Leather, $6.25.

The author of this book has steadily advanced in eminence in his specialty until now there is none greater. His work all bears the mark of close study of a vast experience; and his careful observations enable him to sift much of the chaff from the literature of skin diseases, leaving the fruit of ripeness. The present edition as compared with the third—issued during the fall of 1893—is practically a re-written book—so thorough has been the revision on nearly every page. Three new colored plates, representing respectively "malum perforans pedis, with symmetrical keratoma of the palms and soles," "congenital warts," and a "case of mycetoma," as also five new engravings, have been added. Not only in description of lesion and of symptom does this treatise approach perfection; the points relating to therapeutics are practical and effective. While the volume is well-arranged as a text-book for the colleges, it is chiefly as a practical treatise for practitioners that we wish especially to emphasize its value. Indeed, if the doctor needs a book on skin disease, the treatise under notice is about the best one-volume work that we know of to commend as being up to date. The excellent Index is a great help for quick reference to subjects. The Publishers have done their part in good style, and the price is moderate. The student who gets this book will find it a useful investment, as it will well serve him when he goes into practice.

Leprosy, and the Charity of the Church. By Rev. L. W. MULHANE. Chicago and New York, 1896. 8vo. Pp. 155. Cloth.

This is a most interesting account of leprosy as seen through the eyes of the priest, who, however, is familiar with the medical literature of the subject. It describes leprosy of the ancients, middle ages, and of the present day, showing that it is the same disease. It recognizes the menace of leprosy to become established on this Continent. It also describes the case of lepers in different countries, and points out some of the good work the Catholic church is doing among them. A large part of the book is taken up in just eulogies of certain priests and Sisters of Charity who have devoted their lives to the cure of lepers. A number of illustrations are introduced to show the appearance of lepers, etc. The doctor finds much of interest in the book.

Editorial.

Medical College of Virginia.

The fifty-fourth annual Commencement Exercises of the Medical College of Virginia were held in the Academy of Music, Richmond, April 22d, 1897. Diplomas were awarded by the Dean of the Faculty, Dr. Christopher Tompkins, to the following thirty-four graduates as doctors of medicine: McCabe Banks, Madison, Va.; Greer Baughman, Richmond, Va.; H. M. Banner, Aurora, N. C.; Joseph C. Burks, Sherwood, Va.; A. P. Cutchin; D. B. Drewry, Drewrysville, Va.; A. B. Griner, Rural Retreat, Va.; Charles M. Hazen, Bon Air, Va.; S. S. Hepburn, Jr, Oliver, Va.; Joseph H. Hiden, Richmond, Va.; Charles W. Keel, Brantsboro, N. C.; W. J. Knight, Wiggins Cross Roads, N. C.; W. F. Lancy, Dudley, S. C.; W. A. McGowan, Richmond, Va.; P. St. L. Moncure, Richmond, Va.; Dorsey L. Morris, Richmond, Va.; J. B. Pearson, Jr., Fremont, N. C.; B. W. Rawles, Suffolk, Va.; M. G. Robinson, Charlottesville, Va.; James E. Roles, Lilly Dale, W. Va.; Thomas R. Rucker, Lynchburg, Va.; Marvin P. Skeen, Farmers, N. C.; W. W. Seward, Surry Courthouse, Va.; Thos. J. Simms, Apple Grove, Va.; R. M. Taliaferro, Sandidges, Va.; E. B. Tompkins, Natural Bridge, Va.; P. E. Tucker, Lowesville, Va.; Francis W. Upshur, Richmond, Va.; C. R. Wharton, Ruffin, N. C.; Thomas P. West, Bellevue, Va.; R. E. Whitehead, Blossom Hill, Va.; R. E. Wilkinson, Richmond, Va.; W. R. Williams, Pounding Mill, Va.; J. B. Woodville, Sweet Springs, W. Va.

The Dean then announced the following hospital appointments: Resident Physicians Old Dominion Hospital—Dr. Charles W. Keel and Dr. B. W. Rawles; Resident Physician City Almshouse—Dr. Greer Baughman; Resident Physician Retreat for the Sick—Dr. R. M. Taliaferro; Resident Physician Sheltering Arms—Dr. D. B. Drewry; Resident Physician St. Vincent's Hospital, Norfolk—Dr. P. St. L. Moncure; Resident Physician United States

Marine Hospital, Boston, Mass.—Dr. Francis W. Upshur.

The Alumni prize, given by the Alumni Association to the graduate making the highest average mark on examinations in all departments, was won by Dr. C. W. Keel. The other prizes were delivered as follows: *Faculty Prize* (for second best standing), Dr. Dorsey Morris; *Purcell, Ladd & Co.'s prize* for the third best standing, Dr. Greer Baughman; *Dr. Chas. M. Shield's prize* for the best examination on diseases of the eye, ear and throat, to Dr. Dorsey Morris; *Dr. Geo. Ben. Johnston's prize* for the best report of his clinics, to Drs. E. P. Tompkins and P. St. L. Moncure; *Dr. J. W. Long's prize* for the best examination on gynæcology, to Dr. Greer Baughman; *Dr. Ramon D. Garcin's prize* to the graduate having the best standing in the practice of medicine, to Dr. F. W. Upshur (in this connection, Dr. Greer Baughman was mentioned with honor); *Dr. D. A. Kuyk's prize* for the best standing in the eye, ear and throat class, to Dr. Sewell S. Hepburn; *M. J. Garvin's prize* for the best examination on surgery, to Dr. T. R. Rucker; *Dr. W. F. Drewry's prize* for the best examination on diseases of the nervous system, to Dr. P. St. L. Moncure; *Dr. W. C. Barker's prize* for the best standing on diseases of the nervous system, to Dr. B. W. Rawles; *Valentine Meat Juice Company's prize* for the best examination on materia medica and therapeutics, to Mr. Frank M. Reed, of the second class.

The address of the evening was delivered by Rabbi Edward N. Calish, of Beth Ahaba Synagogue, of Richmond. After the exercises at the Academy of Music, the Board of Visitors, the Faculty, and the students of the College, together with a large number of invited guests, repaired to Sanger Hall, where a banquet was served.

The Alumni Association of the College held its annual meetings during the morning and evening of the same day. During the morning session, Dr. R. B. Teusler, of this city, read a paper on "Tuberculous Diseases of Bones." Dr. R. F. Williams read another interesting paper on the same subject, and reported a case of congenital hip joint disease. Both papers were then fully discussed. At the evening session, business matters were attended to, and new officers were elected as follows: *President*, Dr. W. F. Drewry, of Petersburg; *Secretary*, Dr. D. A. Kuyk, of Richmond; *Treasurer*, Dr. Edward McCarthy, Richmond; *Orator at the next Annual Meeting*, Dr. Dan. J. Coleman, Richmond. Resolutions were adopted praying the next Legislature of Virginia to remove the heavy taxes upon doctors for license to practice, and also providing that candidates for the Legislature shall be pledged, as far as possible, to vote for the annual appropriation to Old Dominion Hospital.

Value of Richmond Professional Services.

A council committee of the city of Richmond values the annual services of doctors at a very small price. Thus it wishes to fix the salary of the President of the Board of Health at only $300, and of the Physician to the City Almshouse (commonly known as "City Hospital") at $600 a year; and requires that the President of the Board of Health shall fill both places. Short-sighted policy not to have as competent a doctor as now in each place; and a salary large enough for each to live upon, in order that their entire time might be given to the work before them.

Professors to be Elected.

Vacancies in the Faculty of the Medical College of Virginia, occasioned by the resignation of Dr. J. W. Long, as Professor of Diseases of Women and Children, and by the death of Dr. Charles M. Shields, late Professor of Diseases of the Eye, Ear and Throat, will be filled by the Board of Visitors at a meeting to be held at 8 P. M., May 26th. Advantage will be taken of this opportunity to make changes in some of the present chairs with reference to an increase from the three to the four years graded course which has been determined on.

University of Virginia Gets $150,000.

The New York Court of Appeals, in denying the motion for re-argument of the celebrated Fayerweather will case, makes good the decision of weeks before, ordering the distribution of the $2,500,000 residue of the estate to the twenty colleges named in the will. By this decision, the University of Virginia receives $150,000. It may be that out of a part of this fund the contemplated hospital of the University will be built and equipped.

Kentucky's New U. S. Senator

Is Dr. William J. Deboe—having been elected on the sixteenth ballot. Dr. Wm. G. Hunter, also of Kentucky, represents his Congressional District in the U. S. House of Representatives.

University of Maryland, School of Medicine,

Graduated seventy-four doctors of medicine at its Ninetieth Commencement, April 20th.

To Correct Hospital and Dispensary Abuses in New York.

The following bill, designed to correct the hospital abuse in New York, has passed both Houses of the New York Legislature, and is now in the hands of the Governor. It is to take effect October 1, 1897:

"SECTION 1. By this act a 'dispensary' is defined to be any institution, agency or place, society or association, whose actual or alleged purpose it is to furnish, either gratuitously or at a merely nominal price, to indigent, needy or other persons not resident therein, medical or surgical relief, advice or treatment, medicine or orthopædic or other like appliances.

"SEC. 2. On or after the first day of October, eighteen hundred and ninety-seven, it shall not be lawful for any one to establish, conduct, or manage, at any place in this State, a dispensary not duly incorporated as such under the laws of this State, or not connected with another incorporation and licensed by the State Board of Charities.

"SEC. 3. In no case shall a dispensary be established, carried on or conducted in any place in this State commonly known as a 'drugstore,' nor in any place or building in the State defined by law or by an ordinance of a board of health as a 'tenement house.'

"SEC. 4. It shall not be lawful for any person or persons to display the word 'dispensary,' or to cause the same to be published in any form or in any manner in order to attract any indigent, needy or other person to any dispensary not duly incorporated or licensed, as provided in section 2 of this act.

"SEC. 5. Any person who shall, by means of any willful false representations, on his or her part, obtain at any dispensary medical or surgical relief, advice or treatment, medicines or orthopædic or other appliances, or any person who shall willfully violate any of the provisions of this act, shall be guilty of a misdemeanor, and, upon conviction, shall be required to pay a fine of not less than fifty nor more than two hundred and fifty dollars.

"SEC. 6. The State Board of Charities is hereby empowered to make rules and regulations and to alter and amend the same when, in its opinion, necessary, in accordance with which, indigent, needy, or other persons shall be given medical or surgical relief, advice or treatment, medicines and orthopædic or other like appliances by such duly incorporated or licensed dispensaries; and the said board is hereby empowered, a chance for a hearing having been given, to annul the incorporation or suspend the operations, or to revoke the license of any dispensary for willful neglect or failure on the part of its managers, trustees, officers or employees to comply with the rules and regulations so established by said board; but nothing in this act contained shall be construed to mean that said board shall have power to determine the particular school of medicine under which the dispensary shall be conducted."

Requirements for Admission as Students In the Chicago Medical College.

Dr. N. S. Davis, Jr., publishes the following as the "revised requirements for admission" as students in the Chicago Medical College:

Applicants for admission must present diplomas or certificates from recognized colleges, schools of science, academies, or high schools, or sustain an examination in the following subjects:

1. English language.
2. English literature.
3. Mathematics—(*a*) Algebra, through radicals and quadratics; (*b*) geometry, plane and solid.
4. Physiology (Martin's Human Body).
5. Geography.
6. History—(*a*) United States history; (*b*) Smith's Smaller History of Greece; (*c*) Allen's History of Rome; (*d*) Myer's General History.
7. Physics.
8. Two of the following subjects: (*a*) Botany; (*b*) zoology; (*c*) astronomy; (*d*) geology; (*e*) chemistry; (*f*) history of England; (*g*) Fisk's Civil Government.
9. Latin—The subjects covered in three years of study.
10. Either the subjects covered in two years of (*a*) Greek; (*b*) German; (*c*) French; or one year of German and French.

Note.—For part of the Latin and Greek, French or German, two years' work, higher mathematics, physics, chemistry or biology may be substituted.

The Twelfth International Medical Congress,

To be held in Moscow, Russia, August 12, 1897, will probably have a large American attendance. We have a letter from Drs. N. Senn, D. R. Brower, Casey A. Wood, J. B. Murphy, Harold N. Moyer, D. A. K. Steele, Eugene S. Talbott, and B. T. Whitmore, asking those Americans who propose to visit Moscow at that time to join them in securing tourists tickets through Messrs. Cook & Sons. Full notice of the excursion will be sent on application.

Treatment of Tuberculosis.

As important a subject as this has always been, never in the history of medicine was there a more hopeful outlook for the near approach of the time when we may make favorable prognosis of cases of tuberculosis that are not far advanced. Here and there, it is true, have there been records of cures by outdoor air and exercise, the use of tonics and reconstructives. But since Koch announced the results of his experiments with tuberculin, every detail of successful treatment has undergone minute scientific review, until now we are forced to confess that a way has been blazed that promises a successful issue. More importance than ever has been given to the doctrines of contagiousness of the disease, until at length we are made to kuow of its communication from one person to another. And, fortunately, this knowledge of modes of infection brings with their statement a knowledge of the laws of prevention. We have learned, too, that along with the use of certain agents—such as beechwood creasote, guaiacol preparations, etc., and the long list of formerly approved reconstructives—there is an estimable value to be derived from resort to serum-therapy or some antitoxin that is to be evolved from the blood of the phthisic patient himself. "Antitubercle serum," "tuberculocidin," "antiphthisin," etc., are all products that come near being the essential curative principle; while even in this very issue of our journal it is announced that, in all probability, Koch, after years of diligent study and experimentation, has reached the goal of the race. But, whatever such agent may be, it is being proven that consumptives should have special homes set apart for their treatment. It requires special attention to every detail in order to get the desired results. Besides this, these homes subject patients to such oversight and care as teach them the dangers of transferring the disease to healthy persons, as also of self re-infection. Furthermore, the establishment of such homes is in keeping with the laws of certain communities, which call for segregation of the consumptives.

For years past, Dr. Karl von Ruck has been doing good work in his Winyah Sanitarium, Asheville, N. C. We have been interested from time to time in the reports of his plans of treatment; and now, with the able corps of associates and assistants which he has drawn around him, we may confidently expect that full investigation of the newer methods of treatment will be made, and reports given the profession through the medical prints. We take pleasure in calling attention to the advertisement of this "Sanitarium," on its proper page in this issue, and trust the profession will lend this established enterprise such assistance as will afford ample material for a conclusive test of the improved methods of treatment being brought out.

The Medical College of Alabama and the University of Alabama

Have been united under one control, and will hereafter be known as the Medical Department of the University of Alabama. The Medical College of Alabama was organized in 1859. Of the original Faculty, all have passed over the river except Dr. Geo. A. Ketchum, the present Dean. That year there were 111 matriculates, and 14 graduates of that session. The General Assembly of Alabama voted $50,000, with which buildings were erected. The War interrupted. Since 1868, there have been 2,709 matriculates. On the Commencement occasion, held April 9th, there were thirty-two graduated doctors of medicine, and eight graduates in pharmacy. The change in name to the Medical Department of the University of Alabama does not change the location from Mobile, nor the composition of the Faculty; but secures many advantages and patronages which naturally come of union with a university.

Correction.

Some weeks ago, in commending the course of the editor who resigned connection with a medical journal in Chicago because the proprietors demanded that he should insert advertising notices in the reading matter which he did not believe to be true, we inadvertently used the name *Medical Sentinel.* Dr. Henry W. Coe, Portland, Oregon, is owner as well as editor of that excellent journal, which enjoys the enviable reputation of being the organ of State Medical Societies of Oregon, Washington, Idaho and Montana; and those who know the *Medical Sentinel* and its editor, would know that our use of the name of that journal in such a connection was either a typographical or clerical error.

The Medical Register

Is the title of a monthly medical journal, under the auspices of the alumni and faculty of the Medical College of Virginia, to begin May 15th. Dr. Ernest C. Levy is to be the editor-in-charge, and our knowledge of his ability leads us to believe that it will be ably conducted.

Long Island College Hospital.

On the Commencement occasion, March 31st, sixty-eight were graduated doctors of medicine. This is the largest number ever graduated from this College; and the class of the session just closed was also the largest ever matriculated in it—numbering 379.

The Columbus Medical Journal,

So ably conducted by Dr. R. Harvey Reed as editor and manager, has removed from 150 E. Broad street to 68 Butler avenue, Columbus, Ohio.

Obituary Record.

Dr. Charles M. Shields

Died at his home in Richmond, Va., April 16th, 1897. He was born in this city January 1st, 1856. His academic education, after his school-boy days at home, was received from Roanoke College, Va., and then Richmond College, directing his studies to those branches which would best fit him for a pharmacist. After leaving college, he entered as clerk in a drug store of this city. But soon afterwards, determining on the profession of medicine, he matriculated at the Medical College of Virginia, from which he graduated as Doctor of Medicine in 1879. He then served two years as house physician in the City Hospital. After a short while of general practice, he became the assistant to Dr. Joseph A. White in his special line of practice in diseases of the eye, ear and nose. After several years of such association and preparation, he established his own office, and soon secured a large practice in his specialty, and continued to grow in skill and reputation until the fatal disease (tuberculosis) seized upon him. This disease, it is believed, he contracted from a patient with laryngeal phthisis whom he was attending several months ago. The disease was sudden in its manifestations, and scarcely expected before its acute miliary developments foretold the inevitable result. Indeed, its progress was so rapid that the announcement of its presence was a surprise to most of his friends. Every professional attention was given that able and friendly colleagues could render.

Dr. Shields held a high place in the regard of the profession. In 1890, he was chosen lecturer on diseases of the eye, ear, throat and nose in the Medical College of Virginia, and three years later, when the chair for the study of these diseases was created, he was elected Professor, which position he filled till his death. He joined the Medical Society of Virginia in 1880; and beside attending several sessions, contributed occasional papers to the *Transactions*. He was an active member of the Richmond Academy of Medicine and Surgery, of which he was an ex-President. He held membership also in the American Medical Association, the American Association of Laryngologists and Otologists, etc. In short, he was an earnest advocate of all associations which promoted professional fraternal feeling and scientific advancement. He was also a Mason and a member of the Order of the Golden Chain. He was a communicant in St. Paul's Episcopal Church, of this city, and also one of its vestrymen. In 1881, he married Miss Margaret Pew, of Lexington, Mo., who, with three daughters and a son, survive him.

The Faculty of the Medical College of Virginia and the Richmond Academy of Medicine and Surgery each held special meetings to pay tribute to the memory of the deceased. The appreciation of his merits and character and the kindly regard in which he was held was attested by the full meetings and the touching remarks made by his late associates in the College and in the profession.

Dr. James Russell Nalle,

Born in Petersburg, Va., April 28th, 1829, died at his home in Richmond, Va., April 19th, 1897. He studied medicine at the University of Virginia, and then matriculated in the University of Pennsylvania, graduating from that institution about 1850. For the next five years, he served on the University of Pennsylvania Hospital staff, and then returned to enter upon the practice of his profession in Petersburg. Bad health, however, three years later, compelled him to give up practice in a city, and he moved to Amelia county, Va., where he continued to practice until the Confederate War. He served as a Confederate surgeon during the war with the field hospital service in General Henry A. Wise's Division. In 1867, he moved to Richmond to resume practice, where he lived until his death. He was a man of few professional associates, but very pronounced friendships. His ideas of ethics were elevated, and he declined to connect himself with either city or State medical organization, because he could not reconcile himself to a recognition of all of the members as professional brothers. He was a Mason and a member of All Saints Episcopal Church of this city. He was a man of strongly generous impulses, and loved the study of medicine rather as a science than to gain wealth. He was never married. His nearest surviving relative is a sister, Mrs. Virginia E. Boyd, of Richmond.

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Original Communications.

HEREDITY AS A CAUSATIVE FACTOR IN DISEASE.*

By WILLIAM S. GORDON, M. D., Richmond, Va.,

Professor of Physiology, University College of Medicine, Richmond, Va.

Mr. President,—The subject selected for discussion at this meeting is so deep, so extensive, and so far from being thoroughly explored and understood, that it is doubtful whether I could conscientiously thank you for appointing me the reader of the introductory paper. When one considers the contributions of the eminent scientists of the present and past, who have made heredity a special study, he may well shrink from such a task as you have imposed upon me, doubting whether he can add to the information obtained, and convinced that, in the time allotted, he could hardly expect to present even a satisfactory compilation. While, therefore, I do thank you, as a matter of simple justice, for the honor conferred, I am sure you will pardon me for a failure to accomplish what others are yet far from having accomplished.

By heredity, is understood the transmission of physical and psychical qualities from ancestor to progeny; also, according to Webster, "the biological law by which living beings tend to repeat their characteristics in their descendants." Gould defines it as "the principle or fact of the transmission of physical or mental qualities or tendencies from ancestor to offspring." Another definition is: "Heredity includes whatever is transmitted, either as actual or potential characteristics, by parents to offspring."

The main questions in this discussion are: "Is there such a thing as heredity?" and, "If so, how far is it responsible for disease?"

It must be acknowledged that the physical and psychical qualities and peculiarities, and the diseases of human beings, are frequently observed for generations in their descendants. In all ages, this truth has been a matter of fixed belief; and, so far as the mere fact of what we term "inherited" qualities is concerned, all thinkers and observers are agreed. At the present day, the direct inheritance of diseases has been seriously questioned by writers of sound mind and judgment, although the same authorities concede that a predisposition to disease is inherited, and that the specific and exciting cause must originate either in the individual or be the result of his external environment. It cannot be denied, on the one hand, that the environment of the offspring may, from the identity with the environment of the ancestor, be a factor in producing the same qualities or peculiarities in the offspring as are observed in the ancestor; while, on the other hand, if a predisposition to disease be conceded, it is none the less true that the predisposition is as much under the laws of heredity as the disease itself. Heredity still holds, and, if possible, must be explained.

I know a family in which the first-born child—a male—bore a striking resemblance to its father. The second—a female—was stamped from its birth with the lineaments of its maternal grandmother and one of its mother's sisters. The third child—a female—is, in physiognomy, almost a *fac simile* of its father. Not only so: the first child, in sleeping, always assumed the peculiar position of the head and neck which his father assumed; the second child, before it began to talk, evinced the generous traits of its mother, and the systematic instincts of the father; while the third child evinced a disposition, akin to its father's, of holding on to what it had acquired. Kindred illustrations can be multiplied in almost any family, and cannot be explained by the environment of the child, by education, or by the force of example. It might be urged that the resemblances of the traits and habits enumerated were, so to speak, coincidences; but

* Read before the Alumni Association of the University College of Medicine, Richmond, Va., April 29, 1897.

when the resemblances are multiplied and are observed to extend through several or more generations, and when they are manifested before surrounding circumstances have exerted their influence, the conclusion is irresistible that they are not always mere accidents of development or birth, but the result of a law operating through generations and moulding the offspring, with its variations, after a common pattern.

I leave the question of mere heredity, therefore, as a fact which, however difficult of explanation, is nevertheless a matter of self-evidence. The parent perpetuates itself, and to a greater or less extent, lives its life over again in its descendant. If this truth be not absolutely proven, it must be assumed.

"Congenital resemblances may be anatomical, physiological, or psychological, and in each of these classes they may be normal or pathological."

Illustrations of this truth are numerous, and need not be mentioned, inasmuch as we are familiar with them in our daily experiences.

Another interesting fact in heredity is latency, which may be adduced as an explanation of atavism, or reversion to type. Darwin states: "In every female all the secondary male characters, and in every male all the secondary female characters, apparently exist in a latent state, ready to be evolved under certain conditions." Hydrocele has been known to be inherited from the maternal grandfather, and the bull may transmit to his female descendants the good milking qualities of his female ancestors. Other examples will suggest themselves.

The subject of reversion is exceedingly interesting, and reversion, after crossing, is even more interesting. Darwin refers to "the frequent appearance of marked stripes upon the legs of the mule, the mule being a hybrid from the horse and the ass, both of which are comparatively unstriped, but are undoubtedly descended from a striped zebra-like ancestor." The theory of latency as an explanation of reversion, is strengthened by the fact that reversionary characters are often more prominent during youth than during later life.

Regeneration, whether physiological, as in the reproduction of parts during life, or pathological, as in the replacement of parts accidentally lost, is governed by the laws of heredity.

The inheritance of acquired characteristics has been the subject of voluminous discussions. In unicellular organisms, reproduction by fission establishes direct and incontrovertible heredity; but in sexual reproduction, the relation of germ-plasm, or the hereditary substance of the germ-cells, to the somatoplasm, or the protoplasm of the remainder of the body, is as yet an unsolved problem, despite the apparent inheritance by the offspring of traits and peculiarities acquired by the parents. The conditions can so often be explained on other hypotheses, that for the present we must consider that we have no conclusive evidence upon this point.

Having considered the conditions and principles of heredity, the next question is, How can it be explained? The starting point must be what Weismann calls "germinal substance" or "germ-plasm," or, as called by Nägeli, "idioplasm." Most physiologists agree with Strasburger and Hertwig, that the chromatic substance of the nuclei of the germ-cells transmits the hereditary qualities. As to the origin of the germ-plasm, Spencer and Darwin believe in the production of germ-plasm within each individual by a collection in the reproductive organs of minute elementary vital particles, called by Spencer, "physiological units," and by Darwin, "gemmules," that come from all parts of the body. Each part of the body, therefore, is supposed to have its representative in every germ-cell. This theory lacks the proof of observation and experiment. Weismann maintains the sole origin of the germ-plasm from the germ-plasm of the parent instead of from the bodily tissues of the individual. He traces it back to unicellular organisms, and maintains its direct continuity from one individual to another. There are good grounds for belief in the general truth. From a morphological standpoint, Weismann further holds that the fertilized ovum contains within its structure the rudiments of the various cells, tissues, and organs of the body to be formed; that growth is a development of these already existing germs, and is independent of surrounding influences. This is practically the theory of preformation. The other school believes with Hertwig, that the fertilized egg is isotropous—one part being essentially like another part—and that growth is largely a reaction of the living substance to external influences. This is a reviving of the theory of epigenesis, which supposes that the differentiation of definite parts depends upon the influence of a mysterious power believed to be resident in the living substance. The modern advocates of preformation explain hereditary resemblance by the supposed similarity of all germ-plasm in any one line of descent; while the modern advocates of epigenesis, while admitting a material basis of germ-plasm, attribute hereditary resemblance to similarity of environment du-

ring development. As to the variations from the parental types, they may be either acquired by the offspring subsequent to fertilization or birth, and hence to be traced to environment; or, they may be congenital—that is, inherent in the germ-plasm. Two causes for variation may be given: One, the difference in the nutrition of the germ-plasm; and the other, sexual reproduction.

To recapitulate: Darwin's theory of pangenesis, which is a theory of preformation, already mentioned, has been materially modified; but neither the original theory nor its modifications have been generally accepted. Weismann's theory is at present the most actively discussed. It claims a germ-plasm of highly complex structure, independent of somatoplasm—continuity of germ-plasm and non-inheritance of acquired somatic characters tending to preserve the uniformity of the species; slight nutritional variation of germ-plasm and sexual reproduction, tending to destroy that uniformity; the result, inherited resemblance and congenital variation. So far as epigenesis is concerned, extreme views are not so numerous as those of preformation.

Moderate thinkers at present acknowledge truth in both preformation and epigenesis. Experiments are being made on the lower animals, especially the marine invertebrates, to determine how far one or the other theory may be entertained. The work is itself in the embryonic state, but the future will add much to the understanding of heredity.

I have endeavored, in the foregoing paragraphs, to discuss heredity as an admitted fact from the standpoint of modern scientific observation and research, and as applicable to the transmission of anatomical, physiological and psychological resemblances, and I have also endeavored to show that external environment, however important a rôle it may play in causing resemblances of the offspring after birth to the parent, cannot account for a large number of the conditions and principles of heredity. The important and practical question arises, to what extent pathological conditions and diseases are inherited. The germ theory of disease now becomes an interesting factor. Let it be remembered that predisposition to disease if inherited is still an inheritance, and as stated in the first portion of this paper, must be explained. Constitutional weakness, under such circumstances, may render the offspring liable to disease, and yet the nature of the disease may be finally determined by the specific nature of the germ found in an external environment. Even without a background of inherited constitutional weakness, the offspring may suffer with the same disease with which the parent or grandparent suffers because it was exposed to the same external source of disease. This is an axiom. But it is quite a different proposition to state that all pathological resemblances are beyond the laws of heredity. In certain cases, whether few or many, the same general principles must apply to the inheritance of disease as to the inheritance of normal characteristics. Proneness to mildness or severity of disease, and immunity from disease, appear to be, in certain individuals, directly transmitted. Infectious diseases, especially, have been known to cling for generations to a certain family, and it is now asserted that in an increasing number of cases there appears to be a transmission of a specific micro-organism. When the microbe is conveyed in the ovum or semen, the transmission is called germinal; when the microbe reaches the fœtus after uterine development has begun, the transmission is called placental or intra-uterine. As an example of germinal infection, there seems to be no doubt that syphilis can be adduced; while, though stated to be not fully proven, the germinal transmission of tuberculosis has been strongly maintained.

Among intra-uterine infections, there are good reasons for maintaining as examples, typhoid fever, scarlatina, small-pox, measles, anthrax, and probably tuberculosis, syphilis, and Asiatic cholera. As stated by one writer, however, it is obvious that neither "germinal nor placental inheritance, both taking place through the medium of a specific micro-organism, and not through the modification of germ-plasm, is comparable to inheritance in the customary sense."

It only remains to add, in this connection, that "if a pathological character has been acquired by the parent, and is not inherent in his own germ-cells, it is extremely doubtful whether it can be passed on to the child."

The inheritance of nervous and mental diseases has always been to me a subject of increasing interest. Suicidal tendencies have been observed at five years of age. Alienists inform us that in a large and probably increasing proportion of insane patients heredity plays an important causative rôle. Except in such cases of insanity as are produced by physical disease, or result from nervous lesions due to microbes, the germ theory is eliminated from the discussion. Insanity in the progenitor may be followed by various nervous diseases in the progeny, while nervous diseases in the progenitors may be followed by insanity in the offspring.

There is nothing more conclusive to my own mind of pathological heredity, whether as predisposition or actual disease, than the examples just mentioned.

In reading the admirable lectures of Trousseau on this subject, one can hardly be skeptical as regards the heredity of nervous affections —chorea, epilepsy, and other diseases. I wish that time would allow me to quote fully from the celebrated physician, but I can only refer to his masterly observations and conclusions from a clinical and pathological standpoint. He calls attention to the fact, quoting authorities, that certain individuals, born of a second marriage, contracted by a perfectly healthy woman with an equally healthy man, were affected with the same disease with which the children of an anterior union suffered—a disease which had attacked the first husband of the mother. Such instances open a wide field for research.

In conclusion, let me add that I regret my inability, for various reasons, to treat this fascinating subject at greater length, but let me express the hope that some light has been shed and that the fact of heredity has been established. I have quoted freely at times without quotation marks from the excellent article on Heredity by Dr. Frederic S. Lee, in the *American Text-Book of Physiology*, and I close with a quotation from an article by Dr. Henry Holland, published in 1839 in a work entitled—"Medical Notes and Reflections."

"It is unnecessary to point out the important relation to practice of all that concerns hereditary tendency to disease. The subject is one which meets us at every step, and to which our attention is perpetually required, as an exponent of symptoms, as affording some of the most certain means of prognosis, and as directing us in many particulars to the right course of treatment. No judicious practitioner will neglect the resources hence derived; which it is probable may be largely augmented in future, both by increased attention to them in practice, and by the actual extension of our knowledge in this branch of physiology."

6 *East Grace Street.*

A Natural Inference.

"Ya-as," said an Indiana citizen, whose home lies in the fertile valley of the "Waybosh," "I happened to be in Charleston when the fust yearthquake cum."

"What did you do when you felt the trembling?"

"I tuk thirty grains o' quinene, b'gosh."—*Corpuscle*, April, 1897.

SOME RECENT ABDOMINAL SURGERY.

By I. S. STONE, M. D., Washington, D. C.

Professor of Clinical Gynecology, University of Georgetown; Surgeon to Columbia Hospital, etc.

The following brief report of surgical work embraces all cases of abdominal or pelvic surgery done in Columbia, Sibley, and my private hospitals during the past year. One of the deaths occurred in Sibley, and two at Columbia Hospital.

In the last report published in the *Virginia Medical Semi-Monthly*, June 26, 1896, it will be seen that the last fifty sections were without mortality. This gives me one hundred and fifty cases with three deaths, or two per cent. mortality.

The writer has also to report his exploratory and incomplete operations, which appear in the following list:

COMPLETE OPERATIONS.

15 *Supra-vaginal hysterectomies.* Two of these were for sarcoma; the others were fibromyomata of various sizes. All of the tumors were removed by the method of amputation at or below the internal os. The patients not only made easy recoveries, but without any bad symptoms whatever. Some of the cases were complicated, but as nearly all of these cases have been reported recently elsewhere, I will make no further mention of them at the present time.

9 *Completed ovariotomies for large tumors.* One ovarian tumor could not be entirely removed. The sac was sutured to the abdominal wall and drained. Two of these were papillomatous cysts. Three were dermoids.

3 *Myomectomies.* One or more tumors enucleated from uterine walls. One of these died of intestinal strangulation through accident.

13 *Operations for retroverted adherent uteri.* In all of these cases an abdominal incision was required to liberate the uterus and annexa from their abnormal position.

3 *Alexander-Adams operations for retrodisplacement of the uterus.* One of these required separation of adhesions before the uterus could be raised.

34 *Operations upon the annexa for pus, etc., or results of pelvic infection.* In some of these cases the uterus was also removed.

3 *Operations for removal of annexa for small soft uterine myomata.*

1 *Removal of entire large omentum for cystic degeneration.*

3 *Nephrorrhaphies for movable kidney.*

1 *Nephrectomy for large cancerous tumor of kidney.*

1 *Cholelithotomy.* Four gall-stones removed.
1 *Operation for distended gall bladder.* No stone found.
4 *Herniotomies.*
3 *Operations for appendicitis.*
1 *Operation for cure of artificial anus.* Murphy button used. Sigmoid resected. Button passed in fifteen days.
1 *Extra-uterine fœtation.* Tube removed with contents before rupture.
4 *Vaginal hysterectomies.* Two of these were bad pus cases. Two had fæcal fistula from former operations.
2 *Tubercular disease of peritoneum.*

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102 *Abdominal and pelvic operations during the past year.*

EXPLORATORY OR INCOMPLETE OPERATIONS.

1 *For cancer of the liver.* To ascertain nature of tumor.
1 *For sarcoma of mesenteric glands attached to vertebral column and aorta.* Tumor size of cocoanut.
1 *For long standing pelvic disease.* Three vaginal punctures had failed to relieve. Exploratory operation revealed extensive disease involving region of kidney, and burrowing so far that all thought of operation was promptly abandoned. The patient died of exhaustion in less than two days.

REMARKS.

The uterus was sutured to the abdominal wall in nearly all the cases after double salpingo-oöphorectomy. One patient died more than two weeks after section. Three operations had been performed upon this woman by other surgeons. She had symptoms of iodoform poisoning, and was insane nearly two weeks before her death. The other case was much like the last mentioned, a case of neglected pelvic disease, the removal of which caused death by shock. Both cases had thorough iodoform gauze drainage. The other death was due to incarceration of a loop of intestine through the wound after a beautiful easy case of myomectomy. Unfortunately, the cause was not discovered until after death.

The recoveries were almost without incident; the patients, as a rule, had but little shock. Very little blood was lost at the time of operation, and there was very little soiling of the peritoneum or wound with pus, etc.

No one will say that the deaths were due to lack of drainage, nor was the glass drain used more than twice. Flushing was never resorted to for merely pelvic work.

1449 *Rhode Island Ave.*

PNEUMONIA OR PNEUMONITIS—WHICH? ITS TREATMENT BY ALCOHOL.

By W. J. HARRIS, M. D., Blackstone, Va.,

Formerly Member Medical Examining Board of Virginia, etc.

On a review of all the standard works on the practice of medicine at my command, from Prof. Dunglison to Prof. Osler, I find they all teach that the disease known as pneumonia is an inflammation of the lung, and they emphasize that opinion by calling that disease a pneumonitis—the terminate "itis," always indicates an inflammation of the part named—as pleuritis, peritonitis, cystitis, etc.; that the fever was caused by the local inflammation; and the treatment must be antiphlogistic, as for any other local inflammation—bleeding, leeches or cups, purgatives, and, to round off the treatment, a large blister over the diseased lung. Such was the orthodox treatment when I commenced to practice in 1842. Of course I had to follow the advice of these high authorities from whom I had received my diploma; but I soon learned that heroic treatment could only be carried out on patients who were young and vigorous with great caution, and with the old it only hastened a fatal termination. So the treatment resolved itself into leeches, a blister, and diaphoretics. This was not satisfactory, as the mortality was too great.

Then came the Kasori treatment—tartar emetic, aconite, veratrum, etc. This was more fatal than the other. The medical journals brought it forward, but it did not live long enough to get into the text-books.

Then came Prof. Austin Flint's *Practice*, advocating less medicine and more feeding. This I liked better, and followed that, with some variations, to January, 1881, when I adopted another treatment, which proved more satisfactory, and which I have continued to use to the present time.

On the 24th of January, 1881, I was called to see C. D., a man very ill with a typical case of pneumonia. The crisis had come on about thirty-six hours before, and he had had no treatment. He was greatly prostrated; the pulse was hardly perceptible, the breathing rapid and panting; temperature below normal; right lung solid throughout; skin cool and moist, and he could swallow only with difficulty. I applied hot baths to his body and hot turpentine stupes to his lungs, and gave all the whiskey I could get him to swallow—a measured quart in about twelve hours. By the end of that time he was decidedly better. I then ordered two ounces of whiskey—

every two hours; this was continued without intermission for two days and nights, and he was also given all the liquid nourishment he would take. He improved rapidly, without the slightest evidence of intoxication at any time. Then the alcohol was *gradually* withdrawn, and his recovery was soon complete.

This case set me to thinking to find out where that inflammation was that our authorities made the basis of their treatment. They divide the disease into three stages—congestion or engorgement, red hepatization, and gray hepatization. They do not claim that engorgement is inflammation, but that inflammation begins with red hepatization. I think that is an error, but that it *begins with gray hepatization*—that red hepatization is only a condition of stasis.

Let me give an illustration: Fill a good filter with James river water (Richmond has not only seven hills like Rome, but also a *Tibre flavus*). At first the water will run through the filter rapidly and be clear—it has left its sediment in the filter. Then it will run slower and slower until the filter is choked up, and then it will not run through at all. Wash the filter clean, and you find the filter will act as well as at first.

So with the lung, if you can get the exudate absorbed promptly—as every hour it remains it is exposed to septic degeneration. Flint says (5th edition, page 162 of his *Practice*): "The pulmonary structure remains intact while the exudation remains, and its functional capacity is fully restored after the exudation disappears." I think Thomas Watson and other writers agree with him. This led me to conclude that we should have two leading objects in view in the treatment of pneumonia: 1. To support the heart when the crisis comes; and, 2. To promote rapid absorption of the exudate and thus abort or eliminate the stage of gray hepatization—the real source of danger.

I am sure I have seen this done in a number of typical cases. I have directed my treatment to these two objects for the past sixteen years (from January 24, 1881, to the present by a record), with very great satisfaction, especially with elderly patients—for whom I had not been able to find efficient treatment.

In typical cases, I will outline my regular treatment. But little is required during the fever, as that is necessary in all essential fevers to enforce a formation and eliminate the morbific elements from the blood. I simply correct the secretions by gentle aperients. If the fever is high, 104–5°, I give small doses of Dover's powder and phenacetine or quinine—for rest and to relieve pain. From the sixth to the eighth day, I watch closely for the crisis. As soon as the temperature falls to 100°, which it is likely to do very suddenly, I begin on whiskey, without much regard to the pulse; that generally increases in frequency as the temperature goes down. I wish to anticipate the heart-weakness which is certain to follow. For the first *twelve hours* I have no limit to the quantity of whiskey, except the effect on the pulse and temperature (which generally falls below normal in a few hours); it may require a *pint* or a *quart*. I am not satisfied unless I get some reversal of conditions by that time. Then about two ounces of whiskey are given every two to three hours, as the conditions may require. A turpentine flannel stupe is kept over the whole lung, and the most nourishing diet the patient can take is given freely. By this treatment the exudate is rapidly absorbed. In about three days the lung is fairly resonant, and by the fifth or sixth day from the crisis the patient is setting up.

That was the case with a patient, 65 years old, I treated the past winter. I do not wait for the patient to drift into the gray hepatization before I give *a little milk toddy*. I want the patient saturated with the whiskey before the gray hepatization has time to set in.

I have given up milk toddy years ago. It is a delusion and a snare—not enough whiskey to do any good, but enough of the mixture to make the stomach revolt and become nauseated, and to cause a distaste for the whiskey.

One may object that I give an unnecessary quantity of whiskey. The first twelve hours will usually decide the quantity the patient should take. I was questioning a patient a few weeks past. He had a severe attack of pneumonia last March. He told me he drank a measured gallon in six days; that he did not feel the slightest intoxicating effect during the time he was taking it; that he was up and dressed the fourteenth day from the chill, and was not troubled with much cough and expectoration. He had never taken a regular drink of any spirituous liquor before in his life.

I regard whiskey as the best of all stimulants in pneumonia—more prompt in its effect, and has a remarkable degree of tolerance by the stomach in this disease. It not only enables the heart to stand the strain upon it from the obstruction in the lung, but as soon as absorption begins it penetrates with the purified blood into the exudate, stimulating the absorbents, and causing an aseptic condition in the exudate, thus retarding the gray degeneration, and in my experience actually aborting it en-

tirely—thus saving the lung from purulent infiltration, etc.

It is claimed that a young and healthy subject, with the expectant treatment, or even no treatment, will recover. Not all even of that small class get well. Within the past two months, I have heard of the deaths of two friends of mine—young and robust men in the prime of life—and I have no doubt both of them were treated *secundum artem*. Then what become of the old? There is no pretense of a cure for them. The authorities simply pronounce a death-sentence for them.

CASE OF TANSY POISONING.

By W. R. AYLETT, M. D., Orange, N. J.,

Resident Physician Memorial Hospital, etc.

Strange to say, few cases of tansy poisoning are recorded, and yet the drug is extensively used by the lower classes as an emmenagogue and for the purpose of abortion.

The ease with which it is procured has, no doubt, led to its widespread use.

There are few cheap papers in the land that do not advertise Mrs. So-and-So's "never-failing remedy for women," "woman's friend," or some such ridiculous and harmful preparations.

Many of these preparations are composed largely of tansy and pennyroyal.

If illiteracy or poverty stand in the way of procuring the prepared article, a home made decoction may readily be obtained from the garden of the same "granma" who so often applies, sometimes for years, her never-failing herbs, poultices and ointments to victims of scirrhus, carcinomata or other malignant growths; or, too often it is administered by ignorant, unprincipled, and unlicensed midwives.

The case that came under my observation was that of a woman from the lower walks of life, aged 25 years.

Besides being the wife of a drunken husband, who at the time was serving time in the State prison, she was the mother of several young children, and these circumstances, added to lack of food and work, no doubt tempted the poor creature to attempt to destroy the intra-uterine burden that would soon become an additional care.

The preparation used was the oil of tansy, the amount ingested not determined, but probably not more than two drachms. The dose was taken in the morning about ten o'clock, and no effects were observed for two hours. The patient then complained of nausea, muscular weakness, vertigo, and, in her words, "sickness all over."

This condition was followed by several epileptiform convulsions and more or less stupor. Her friends became alarmed and summoned the city physician for the poor. On arrival, and obtaining a history of pregnancy and convulsions, he diagnosed the case as puerperal eclampsia.

Realizing that such a case could not be treated in her surroundings, he summoned an ambulance and sent her to Memorial Hospital. Upon arrival at that institution, the patient was comatose, extremities cold, pupils slightly dilated, muscles relaxed, pulse 88, respiration 44, and temperature 98.5° F. She passed ten ounces of urine, which, on examination, showed nothing abnormal The deep coma following one or two slight convulsions, the absence of a history of scanty urine, and the normal urine rendered the diagnosis questionable.

One minim croton oil and a high enema were given and diaphoresis induced by heat. One hour later, patient became semi-conscious, but had not long been so when she was seized with a convulsion which lasted fifteen seconds. This seizure affected chiefly the extremities, particularly the legs, which were well-flexed, and underwent clonic contractions.

Unlike puerperal convulsions, what little consciousness remained was not lost, nor was the general aspect one of eclampsia.

This diagnosis was now pretty well shattered in the minds of her attendants, and drug influence was strongly suspected.

Several large fluid stools, containing much mucus, were now passed, and the intellect became much clearer.

Patient complained of cramps in the lower extremities and of violent pain in abdomen, which was tender to pressure. Pulse eight hours after admission was 100, respiration 36, and temperature 99° F. Eight ounces of urine passed at this time again showed nothing abnormal.

Patient improved steadily from now on, the only features of interest being the pain in the abdomen and the great variations of heart-action and respiration, the former varying from twenty to thirty beats in the half hour, and the latter showing changes equally as rapid.

Sixteen hours after admission only a moderate amount of tenderness over the abdomen, and a slight weakness remained, and in thirty hours the patient was discharged as cured.

SOME OF THE EVILS THAT THREATEN THE MEDICAL PROFESSION *

By W. S. BEAZLEY, M. D., Richmond, Va.

Demonstrator of Physiology, Medical College of Virginia, etc.

A few meetings ago, Dr. Hodges, in his most excellent paper, on some of the socio-medical problems which confronted us as professional men, aroused the members of the Academy to action. I wish to add to what he has already said.

In these days, when competition is so great, men are offering their services almost without money and without price. The same competition has found its way into the medical profession, and we find its followers offering their services for a small consideration.

Before mentioning some of the evils which threaten to bring our profession into disrepute, I will make two assertions which can hardly be contradicted. *First.* There is no class of men in a position to be as independent as the men of our profession. *Second.* No class of men do more charity work than do physicians.

My first proposition, that physicians can be the most independent of all men, will appear conclusive if we consider the appeals made to us by the maimed, the halt, and the blind. Medical attention is a necessity, and who can render these services save those who have unlocked the mysteries of the human system and studied diseases contained therein. People may, and often do without treatment of a sin-sick soul; but when suffering flesh is made to cry out in agony, then the medical man is sought for relief, and he is expected to respond, even though he fails to receive money or thanks for his services.

Notwithstanding this age of educational advantages, scieutific research and progress in lines of business, we may pause, survey the field, and ask the question, whether or not our profession is advancing, or whether we are being brought into disrepute?

In order to answer such questions, there are certain evils to be considered. The first to which I will call attention is the spirit of jealousy existing among men who should be foremost in the defense of ethics. This evil has invaded our city, and entered the hearts of many of us. Jealousy and uniformity of action are incompatible. With this fact staring us in the face, what is to become of the true worth of our calling?

With uniformity of action, our profession would not only occupy a high place in the estimation of the laity, but the practice of it would be worth to physicians of Richmond several times as much financially as it is now. How often do we answer calls to families only to find out that a dozen or more physicians have given them up because they do not pay. How often, in the still hour of the night, do we arise, shake off the hold of "nature's sweet restorer," to relieve a patient, and hear later, through some of the neighbors, that he doesn't pay doctor's bills? Under the present system of things, some people rarely if ever pay a doctor's bill, for where "patience ceases to be a virtue," and the doctor urges his claim, he is discharged and another called in. Of course, those whose hearts are willing, but whose flesh is weak, are not included in the list of those who delight in seeing our mental faculties burn with anxiety for their suffering flesh without compensation.

It is a sad fact that some people are not even grateful for services rendered. This may be accounted for by the fact that gratitude, being a debt, receives the same treatment as all other debts.

The obligations of patient and physician are mutual, and the physician has the right to expect from his patient the consideration of his health and comfort, and the prompt payment for services rendered.

We will all agree that in proportion to the amount of work we are more poorly paid than any other class of people.

That there is a cause for this state of affairs, all will agree. That we are responsible for the trouble, some may question. Let us see how far we are responsible. Mr. A. has his druggist to 'phone for Dr. B., and Dr. B. refuses because he has not been paid for previous visits. He then calls upon a physician who does not know him, but who, after a long service of faithful work, knows him to his sorrow. When the second physician becomes disgusted and quits, another one is likewise imposed upon, and so on down the list, until the man has lived a lifetime without paying a doctor's bill. A certain man was known to make the brag to a collector that he didn't pay doctor's bills. He sent for me, thinking I was innocent as to his fraudulent methods. I refused to attend him, whereupon he secured another physician. The last I heard of him he was changing physicians, and the Lord only knows when he will stop. I might enumerate other cases, but all of us know too well that such a state of affairs exist.

Now, if we agree that we can better the con-

* Read before the Richmond Academy of Medicine and Surgery, May 11, 1897.

dition of affairs, we must also agree that we are largely responsible for non-appreciation and non-payment of bills by a large number of people.

What is the matter? I might sum it up in these words: *Lack of Unity.* Until we realize that we are one in the profession of medicine, and defenders of each other, there will be discord in the ranks. The dead-beats we have with us, but all of us don't know them. They should be introduced to every physician in Richmond. Let them be known to all our medical brethren, and practice will be worth double as much as it is. In this day, when a great financial crisis is upon us, some of us look, with hands off, at questions of common interest, for fear of losing a few dollars. Selfishness makes us narrow, and we fail to accomplish the purpose for which we were intended.

There is another evil which is threatening our profession, and that is the prescribing of patent and proprietary remedies. I wish to submit three propositions, and try to prove them to you:

1st. The prescribing of such remedies is unscientific.

2nd. It is causing the general public to prescribe for themselves.

3rd. It is increasing the number of manufacturing chemists, and thereby allowing them the privilege of dictating to us as to treatment of disease.

To prescribe a remedy about which we know nothing is unscientific and unsatisfactory to the physician. All of the patent medicines, and many of the proprietary remedies, are secret preparations. I will mention three remedies, which will illustrate my point These are ammonol, pyroctin, and acetifas. If the formula for ammonal has been given, I have never seen it. Pyroctin is said to be a febrifuge, anodyne, and antipyretic. What is the nature of pyroctin? Does it grow on trees, or come out of the ground? We are told that acetifas is acetifas and citrate of caffein. After we have read the formula, we may pause and ask, What is acetifas? We teach our men at College to formulate their own prescriptions. Let us practice what we preach.

I have been told that some of our medical brethren have looked with favor upon castoria, while a few have given Mrs. Winslow's soothing syrup consideration.

In regard to the second point, that it teaches the laity to prescribe for themselves, we have only to listen to our patients as they tell us Dr. So-and-So prescribes Henry's tri-iodides and chlorides. Some people buy these ready-prepared mixtures rather than send for a physician because of the fact of their hearing that physicians prescribe them.

As to the third point, that such prescribing is increasing the number of manufacturing chemists, and thereby allowing them to dictate to us as to treatment of disease—we have only to look on our tables, book-cases, and mantel-pieces, and behold a multitude of worthless remedies. Representatives of these various remedies tell us all about them, the indications for their use, and the surety of their action. Sometimes we take their advice.

Our position should be that of leaders, and not followers. We should be the teachers in this medical world, and elevate rather than lower our profession. We may go back to the days of the pioneers of our noble calling, and ask ourselves if we hold the honor and the dignity of our profession as sacred as they did?

Another evil found among us is our willingness to give testimonials. We not only prescribe patent and proprietary remedies, but we give testimonials as to their merits. These testimonials often go before the public, and, as a result, they patronize these remedies rather than the doctor. May the time soon come when physicians will say to the manufacturers, "We are tired of having you tell us what we want and ought to use in our practice. We will prescribe what we need and get our local druggists to fill the prescriptions."

Of course there are preparations whose formulas are given, and which have proven beneficial in the treatment of disease. Cruel, indeed, would we be to withhold the means of alleviating the pangs of human suffering; but in treating our patients, let us know what we are giving.

As physicians, we ought to be practical men. In administering remedies, we should have a definite purpose in view, and use those from which, from our knowledge of the physiological action of drugs, we can expect results.

To experiment with the secret combinations of remedies, now being sent out to the physicians and the public, is unwise.

The man who fires a load of shot into a covey of birds, hoping that some of them may get a bird, does not deserve as much credit as the man who, taking aim at one particular bird, brings him down.

And now, Mr. President, in closing let me urge the members of this Academy to defend not only their individual interests, but the great principles upon which rests our profes-

sion. Narrow indeed is the world to the man whose ideas are confined to the building up of himself; but he whose life is thrown into the life of others lives in closer touch with the spirit of progress which has blessed our nation.

Some may say to young men, "Our profession is overcrowded; stay out." I would answer them by saying there is room for good men in every calling of life; come on. Let us push onward and upward in the medical world, and always remember that it is a good thing for "brethren to dwell together in unity."

2600 *East Broad Street.*

Correspondence.

Adherent Placenta and Sepsis.

Mr. Editor,—My attention was lately called by a friend to an article in the *Virginia Medical Semi-Monthly*, of January 22d, 1897, written by a neighboring doctor, which does me injustice. Self-justification and the importance of the subject demand a reply. For the past two weeks, I have been awaiting replies to questions from professors of gynæcology from different parts of the country North and South.

From erroneous reports circulated in the neighborhood—that I would not administer chloroform in obstetrical practice—another physician was called to attend Mrs. P. in her confinement. After the birth of her child, I was sent for and delivered the placenta entire, and called the attention of the doctor and of the midwife to it. There being some hæmorrhage, I suggested an injection of hot vinegar.

The Doctor says the hæmorrhage was stopped and *the bandage* applied. He should have stated what sort of a bandage was applied. This extended from the breast to the knees, and was buckled tightly by fourteen safety-pins. It was an obstetrical straight-jacket, keeping body and thighs very uncomfortable Wednesday to Sunday night before it was removed. The Doctor says the morning after the parturition a uterine douche was given Mrs. P., but the husband and midwife deny it. They say there was no injection by vagina or bowel from the first night (Wednesday) to Sunday night. On the third day, in passing by the house, I was told by the husband that there was considerable odor in the room, and I remarked that he should inform the attending doctor; and when he did so, his reply was, that he was managing the case. On the fifth day after parturition, the bandage was removed, and a vaginal douche and an enema given. The Doctor, in his article, said he brought threads of decomposing membrane left in the womb, when at that late day it was very doubtful if decomposing lochia could be distinguished from placental threads or anything else. If the able article of Dr. Kober, in the same journal, had been carefully noted, the answer to his disparaging statements would have been sufficient.

He writes, "Puerperal fever is one of many phases of septic infection. Besides many causes, it may be due (1) to blood poison from the absorption of *decomposing blood* or tissue either in the *uterine* or *vaginal cavity*, (2) the absorption having been rendered possible by abrasions or lacerations occurring during delivery, (3) or from an abnormal loss of blood, (4) great fatigue or exhaustion from labor. After infection has taken place, no organ affords a better cultivating chamber than the womb filled with a suitable medium like lochia of a parturient woman. (5) absorption of putrid gases formed in the *bowels* predispose to wound infection and to puerperal infection; (6) also especial attention should be paid to the removal of the blood clots from the hairy parts."

If, then, a parturient woman is tied up in a close bag for near five days and nights, and the lochial flow be stopped up like a closed sewer, can anything be expected but fever? The wisdom of Solomon could not accurately give any other cause but the use of the obstetric straight-jacket.

This obstetrical fad was introduced several years ago, and fell as flat as a pan-cake, and died out after a fair trial. I have written to many prominent professors of gynæcology South and North, and not a single one has replied in favor of it. (1) A distinguished professor writes that he had used the wide bandage in a hospital, but that they must be frequently changed, and discharges from bladder and bowels attended to. Under such application, fever may not occur, but he has never used the wide bandage in *private practice.* (2) The editor of an obstetrical journal candidly admits "that he never heard of such a bandage. The only purpose of a bandage is to support the relaxed tissues of the abdomen." (3) Another professor of gynæcology writes: "I am opposed to the bandage you refer to. I do not like the manner in which you say it is applied, nor do I like the bandage to remain on so long." (4) Another professor of obstetrics writes: "I have never had any experience in the use of the wide obstetrical bandage extending to the knees and retaining the lochial dis-

charges. I never have, and unless very strong facts are presented I never will, for I can see how it might, and most probably would, produce serious if not fatal injury. I regard the whole process of labor a physiological function, and unless some pathological symptom occurs the most dangerous thing that can take place is the *minimum deligentea medici.* I am opposed to doing too much. Absolute cleanliness is the true base of asepticism, a close imitation of the natural course, and an interference only when something abnormal presents itself, are the rules I have always followed. I fully agree with the mad philosopher in Rasselar that nature will attend to her duties better than I can direct her, and therefore I seek to be her assistant and not her director. I cannot conceive of any conduct more diametrically opposed to these rules than the plan suggested, or better calculated to produce *disease.*" (5) Another professor of obstetrics replies "that he did not use, nor do recent books teach, the using of antiseptic and post-partum douches except in malodorous conditions. Such things are meddlesome interference with nature, and are irrational and properly to be condemned." (6) Another professor of obstetrics writes "that all bandages, more or less, obstruct drainage, and imperfect drainage produces phlebitis and sets up fever." (7) Another professor writes, "I have never used the wide bandage you describe, and only use bandages to support uterine walls. A bandage put on by a stout negro woman with her whole force is a predisposing force *to uterine disease*"

If additional testimony is wanted from prominent obstetricians, they can be presented. In writing for medical journals for over forty years, I have never published the name of a physician in a disparaging manner, and whatever be the subject have given fair statements. Part of a truth is no truth at all, and intended slams often prove unexpected boomerangs.

C. R. Cullen, M. D.

Polegreen, Va., April 30th, 1897.

Anti-Diphtheritic Serum Improved.

Dr. Behring has just announced a new preparation of this serum in solid form which he is ready to furnish on demand. It is said that it can be preserved without antiseptics for an indefinite time, and without the loss of any of its antitoxic qualities. We want to hear more of this, for if true, there will then no excuse why each apothecary should not have a supply always ready for an emergency.

Proceedings of Societies, etc.

RICHMOND ACADEMY OF MEDICINE AND SURGERY.

Dr. Mark W. Peyser, Secretary and Reporter.

Regular Meeting Held May 11, 1897.

Dr. J. N. Upshur, President, in the chair.

Dr. W. S. Beazley read a paper on

Some of the Evils that Threat n the Medical Profession. [See page 72.]

Report of Cases.

Dr. Geo. Ross reported the following cases:

Malignant Disease in Child's Mouth.

Boy, age 8 years. Father, mother and uncle died of consumption. Aunt has it. Grandmother died of apoplexy. An abscess in the lower jaw, due to a decayed molar, was opened several times, and now, in the cavity, there has appeared a foreign growth, about the size of a guinea-egg, and apparently of a malignant character. He reported the case because of the rarity of malignant growths in childhood.

Myelitis and Paraplegia. Partial Recovery. Then Right and, Later, Left Hemiplegia. Paralysis of Diaphragm and Death.

Male, white, aged about 58 years; wore low quartered shoes the whole of one rainy day, and the afternoon, without changing them, put on rubber shoes. The next morning he complained of chilliness and malaise. Walking became more and more difficult until the fifth day, when it was an impossibility to walk. A diagnosis of acute myelitis was made with paraplegia—paralysis of the bladder and rectum, etc. He removed South, remaining an ataxic, then went North, and consulted various authorities, Dr. Seguin among others.

About twelve days ago, while in the city again, he became absolutely paralyzed on the right side, and was taken to the Virginia Hospital. Six days ago, there was a second paralytic attack involving the left side and the diaphragm. In twenty-four hours, articulation became impossible, and he died.

The patient was a student and literary man, with no syphilitic or gouty history, and of regular habits.

The President said Dr. Ross's case was very interesting, especially because of the absence of gouty or syphilitic history. He thought there must have been some condition, back of the myelitis, tending to produce tissue change.

The patient might have *inherited* gout, and along with it slow changes in the vascular system, as deficiency of the elasticity of the vessels, or a change due to the cold going to the brain and slowly acting upon the nervous tissue.

He reported the following case:

Suppurative Salpingitis. Recovery Under Medical Treatment.

Woman, age 23 years; unmarried; seen January 26, at which time she had been confined to bed for five months. She complained of pain at all times; and between 12 M. and 3 P. M. of violent attacks in the hypogastrium.

There was also dysmenorrhœa. Digital examination revealed the fact that she was not a virgin. The uterus was firmly fixed in the pelvis, and its body could not be outlined. In the cul-de-sac, a mass was found as large as an orange, and boggy to the touch. A dirty discharge came from the cervix. There was occasional difficulty with micturition. After tonic treatment and the use of douches at home, she was taken to the Old Dominion Hospital for operation, and Dr. J. W. Long was called in consultation. They agreed that the case was suppurative salpingitis, due in all probability to gonorrhœa. Twice daily douches of normal saline solution, as hot as could be borne, were given, followed by the introduction of a tampon anointed with 25 per cent. ichthyol unguent.

At the end of six weeks, the effusion had entirely disappeared, and the only evidence of pelvic trouble was the dirty discharge.

Menstruation at this time was still irregular. but not attended by pain. Ten days ago, the uterus was dilated and curetted (there being hardly any suppuration), and packed with iodoform gauze. In three days she returned, and very little discharge was seen. She now uses a syringe (capacity, one drachm) to inject pure peroxide of hydrogen, and then swabs out the uterus with ichthyol. Absolute recovery is evidenced, and that without operation. Tonic treatment consisted in the administration, three times daily, of a pill of manganese, iron, and nux vomica.

Dr. Jacob Michaux reported in detail a case of *Abscess of the Kidney*, originating from a neglected case of inflammation of the bladder. Urine secreted, although about one-half of kidney was taken up in an abscess cavity. [Dr. Michaux has the case still under treatment, and as the other kidney is becoming involved, he will reserve a full report of the case until the next issue of this journal.]

Analyses, Selections, etc.

Sprains of Various Joints—Their Treatment.

Dr. Arthur J. Gillette selected this as the title of his Presidential Address before the Ramsey County Medical Society (*Northwestern Lancet*, May 1, 1897).

Injury to a joint is exceedingly complex. Swelling and pain are the most constant symptoms. If called immediately after an injury, as the patient calls attention to the most painful joint, be sure to examine other joints also. If the swelling is great, or the slightest reason to confound the injury with fracture or dislocation, especially in children, etherize. This is of special benefit in suspected Potts' or Colles' fracture, as these fractures do not always immediately assume their characteristics, and the symptoms of sprain in this locality are very similar.

Swelling of sprains is scarcely alike in any two cases. If due to hæmorrhage, it takes place at once. Again, it may come on gradually—within twelve or twenty-four hours—and be smooth and uniform, owing to effusion into the soft tissues as well as into the joint itself. At times, the swelling is more distinct over the course of muscles and tendons; again, the bursæ and tendon sheaths, in the neighborhood of the injury, are distended.

In hinge joints, the mischief falls on the ligaments which oppose a twisting force; in ball and socket joints, the muscles are the greatest sufferers.

Pain is the least definite of all symptoms, depending so much upon the disposition of the patient. Some claim to be able to locate the exact parts injured—ligaments, tendons or synovial membrane—by the conduct of the patient and the sensation complained of, but this seems quite preposterous.

In muscular strains, however, a peculiar sensitiveness of the skin always exists, most marked over its attachment to the bones or tendons; *in the knee*, the tender points are on either side of the patella; *in the ankle*, usually in front of the malleoli.

Some of the conditions found in various sprains are hæmorrhage into the synovial wall, the bursæ become painful and tender, roughened and irregular, and instead of assisting the free movement of one part over another, they hinder it.

Bursal swellings are very perplexing. In many cases where a large cavity overlies a joint, it is very difficult to tell whether the

fluid is really in the synovial sac of the joint or outside of it. Not only the superficial layers, but the intra-articular ligaments suffer as well. On several occasions, the knee has been opened and a displacement of the semilunar cartilages found.

On the *under surface of each of the fingers is* a plate of fibro-cartilage, similar in structure to the disks in the knee joint, and, like them, helping to deepen the socket in which the head of the bone rotates. In wrenches, when the finger is forced backward, this plate of cartilage is torn from its attachment and slips between the bones. The muscles also come in for their share of injury, varying from straining and tearing to extravasation of blood. It often happens that fibres are torn across, while the dense unyielding sheath that surrounds them remains intact.

Riders' sprain is peculiar to horseback riding, and is due to the rupture of the tendon or tendons on the inner side of the thigh. It is caused by the semi-voluntary grip by which the rider secures his seat when his horse shies or bolts. Often a bone or bursæ form because of the constant irritation to which the muscles and tendons are subjected.

In lawn-tennis leg, a sharp pain in the calf of the leg is the first symptom. At first, nothing can be seen, but a slight depression can sometimes be felt, and is very painful to the touch. Later on, ecchymosis takes place.

Dislocation of the tendons and muscles is another division of sprains. Where they cross a joint or run over a process of bone encased in a delicate sheath, the sheath rarely escapes injury, varying from a bruise filled with extravasated blood to a tearing its entire length, and the tendon escapes and lies displaced among the tissues.

On the back, both muscles and ligaments may be dislocated. The muscles are closely packed, but separated from each other by a fibrous tissue, which is dense and firm toward the ends but yielding at the centre. When the contraction is sudden or spasmodic, it sometimes happens that a tendon slips from its bed, tearing its fibrous sheath, and becomes displaced or dislocated.

There are one or two instances on record of the *displacement of the sartorius muscle.* One is the case of a man who was squatting on the floor in the position assumed by tailors.

The most common tendons to *displace are the peronei;* in fact, it is quite common. One can readily see how a sudden twist or wrench of the ankle could easily twist the peroneus longus out of its bony groove and rupture its sheath.

Complete dislocation of the tendons of the back of the hand rarely happens, because of the direct direction they run.

I have at least two cases in which the *long tendon of the biceps was displaced.*

The presence of *varicose veins always complicates very materially a sprain.* Even the bones may be bruised, yet the injury come under the head of a so-called sprain. The injuries and complications are immediately followed by hyperæmia. As soon as the bleeding is checked, the vessels all through the injured area dilate and their walls become laxed and softened. The blood supply is immensely increased—a much larger amount of liquid plasma pours out through the walls into the surrounding tissue; all the interstices are filled with it and become distended more and more.

Natural spaces, such as tendon sheaths, bursæ and the synovial sacs of joints, all become distended. The effusion being so great the joint swells up, the skin becomes tense and shining. From the way in which it is stretched, the skin becomes whiter than natural, the temperature, when the hand is placed upon it, greater than that of the corresponding point of the opposite limb.

The treatment required should be much more varied than we have yet been taught.

Hæmorrhage must be checked at once by pressure or elevation, or by more radical methods if necessary.

If, upon first seeing a case, there is a great deal of heat and swelling, cold applications should be used. The ice bag is by far the most satisfactory, as the cold is uniform and constant. If the heat and swelling continue for two, three or four days, hot applications should follow, but neither are of much service after they have been applied continuously for twenty-four or forty-eight hours.

Above all, the limb should be placed in a proper position, placed as particularly as one would for a fracture.

If the sprain is in the ankle, the foot should be placed at a right angle, and for two reasons: if the joint should become stiff, this is the position you would desire for it, and it is the best position for circulation. These reasons will hold good in all joint injuries.

If the injury is in the knee, it should be extended; *if in the elbow*, midway between supination and pronation, flexion and extension; *if in the wrist*, in a straight position.

Discover complications as soon after injury as possible, thus being able to place the dislocated muscles, tendons and ligaments in as nearly a normal position as possible and

securing them by some form of immobilized dressing.

Probably the easiest dressing for this is the *plaster cast.* As to the length of time for it to remain on one must be guided entirely by the conditions presented, the inclination being to continue immobilization much too long. From ten days to two weeks is usually a sufficient time, and only in very severe lacerations and tendon dislocations should it exceed six weeks.

A very simple and effectual means of support is the so-called *Gibney's dressing for sprained ankles.* It consists of applied straps of rubber adhesive plaster an inch in width and from twelve to eighteen inches in length over the part sprained, beginning back of the injury and aiming to leave the part of the foot not affected as well uncovered as possible, but reinforced well as the straps are applied under the malleolus or malleoli. "The first strip for a *sprain of the external malleolus* is applied, beginning just above the ankle on the unaffected side of the foot, and ending on the affected side about half way up the calf. This strip is usually alongside the tendo Achillis, and makes firm support under the heel. The second strip starts on the inner side of the unaffected part of the foot, near the ball of the toe, comes around over the back of the heel, and ends about the base of the little toe. It crosses the first one just above the border of the heel. The third strip overlaps the first half way, the fourth the second, and so on until the part sprained is fully covered by this criss-cross strapping. A cheese cloth bandage is applied more with the idea of securing close adhesion of the plaster, and is removed within twenty-four hours. As soon as the dressing is completed, the stocking and boot should be applied. The patient is now ready to begin walking, and this should be insisted upon in the presence of the surgeon. Direct him, for instance, to walk about the room eight or ten times. At the end of a week, it is well to remove the strips and reapply in the same manner as above. Two or three such dressings suffice to complete the cure." (Dennis' *Surgery*, Vol. II., page 362.)

Adhesive straps are very useful in *sprains about the knee and other joints.* In *sprains of the spinal column* they are of great assistance.

Imperfect recoveries, however, are the basis of this article, and special attention is called to the treatment of these cases.

Forcible manipulation under an anæsthetic is rarely, if ever, necessary in *chronic sprains.*

It is easy to conceive that in an injured knee joint, held in a flexed position, the hamstring muscles might become contracted, or there might be an occurrence of inflammatory exudate covering that portion of the articulation upon which no pressure has been brought to bear during this long period of flexion of the joint. It might require considerable force to extend this limb, but such cases are rare indeed. A few repeated plaster casts at intervals of a week or two with gentle traction, will soon overcome the deformity, and with far greater ease to the patient and less danger of serious injury to the soft parts.

A neuralgia that quite commonly attacks joints following an injury, occasions considerable loss of power, and seriously interferes with its freedom of action. This affection may be readily recognized by the peculiar periodic character of the pain and the way it is limited to certain spots which correspond to the places where the nerve penetrates the fibrous capsule. The skin over them is exquisitely tender to the touch. The check of the joint is not nearly so abrupt as in simple sprains, and there is very little, if any, change in the joint outline. Rest, constitutional treatment and electricity are indicated. If in the knee joint there is thought to be a displacement of the semilunar cartilages, rest in the extended position for a number of weeks is certainly necessary.

Sprains of the back are very common. The structure is exceedingly complicated, consisting of a number of separate joints of various sizes and shapes, each with its various joint structures, and in addition, the spinal cord running in a canal nearly the whole of its length, giving off nerves which pass out on either side.

One of the most singular things in connection with the treatment of sprains of the back, is the way in which the joints themselves are overlooked, the muscles and ligamentous structures ignored. When there is an injury, it does not seem to count for much in the eyes of the surgeon, unless we find symptoms of the spinal cord being involved. In railway cases, especially if any serious result ensues, it must originate from the cord itself; little or no attention is paid to anything else. It is difficult to see why the other structures should enjoy such immunity.

The vertebral column may be strained, the ligaments torn or stretched, the nerves bruised or crushed, the smaller joints between the ligaments twisted or wrenched, the muscles detached from their bed and torn across, or the fibrous sheaths which contain and help to secure the bones laid open and filled with blood. In short, results of the most serious

character are certainly not uncommon, and often leave lasting evidence of their existence, while the spinal cord itself escapes completely.

Such cases require warmth, applied to the tender parts, hot water or vapor baths, friction, acupuncture, galvanism, massage and rest in bed during the acute stages.

Have you ever noticed that patients with *sprains of the lower extremity* always place the diseased limb at the greatest disadvantage in walking, giving it a wrench, a jolt and a jar, in the great hurry to again throw the weight on the sound limb? Many of these cases are seen with greatly protracted disablement due to this very fact. They carry the limb perfectly rigid, every muscle held as tense as possible, then suddenly throw the weight forward. Is it any wonder they do not gain strength in the limb? Each attempt to walk is followed by pain and swelling, and discouraged, they fail to make further effort. When they step on their feet, instead of carrying the foot straight ahead, they toe out as far as possible, and then, in this position, attempt to walk.

The ankle and knee being hinge joints, and having a motion of flexion and extension, would naturally be traumatized in its weakened condition by any attempt to get lateral motion. Then, too, one can readily see that the muscles cannot give the same support to the limb as when held in proper position. Lack of confidence causes them to hold the muscles rigid, and the position assumed is most tiring and is a great strain, especially to muscles that have somewhat lost their strength by disease. An attempt to walk carefully over an icy pavement makes one appreciate this condition. The fear of slipping makes one hold the muscles perfectly rigid, and after walking a few blocks, we are exhausted and our muscles ache.

In chronic sprains, it is well for patients to begin using their limbs with the aid of crutches, and thus gradually accustom them to normally resume their old functions.

Flat-foot or splay-foot is one of the very frequent results of injuries to the ankle joint. As it is not often noticed until after the patient begins to walk, possibly it is often produced by this extreme abduction of the foot, causing all of the weight to be borne by the medio-tarsal joint when the body is brought forward, necessitating the entire weight of the body upon this part of the foot held in this abnormal position, and this joint, with the rolling of the foot, substituting this movement for the ankle joint.

Another condition which greatly retards walking, and which I have designated *ligamentous relaxation*, is one of the most frequent causes of repeated injuries to the same joint. Many cases give a history of a previous injury to the knee or ankle joint sustained months and even years previous to the one in question, and, by the way, these are the only joints affected by such conditions, because of their function of body support. In these cases, there is extreme relaxation of the muscles and ligaments. A guard in the Stillwater prison, something over a year prior to his visiting me, received a slight *wrench of the knee joint.* This was followed by the usual swelling, tenderness, effusion and painful joint movement. The knee was encased in a plaster cast, and there remained thoroughly immobilized for several months. After the cast was removed, any attempt at walking caused a recurrence of the same conditions, and the joint would be again immobilized. When he consulted me, I could make complete flexion and extension; there was extreme atrophy of the calf and thigh. The knee could be luxated forward, backward and laterally, though not completely, of course; and these movements were attended with slight pain. Complete inflammatory destruction or disorganization would at once be suggested, but the normal temperature, the patient's general condition, lack of local heat as the absence of other evidences of suppuration would contradict it.

Another case, similar in history, of nearly two years' standing, was an *ankle joint injury.* The injury was followed by months and months of immobilization. When the case was referred to me, the ankle joint was so completely relaxed from lack of tonicity of ligaments and muscles about it, that one might have diagnosed paralysis, had it not been for the normal reflexes and sensations. The motion was normal as long as the patient did not attempt locomotion; when he did, pain, tenderness and swelling were the result, and he was again placed on crutches and his foot immobilized. All of this is due to the long-continued immobilization, interference with circulation and consequent feebleness of the muscular system.

In reality, in sprains it is the muscular system that is at fault, for upon it depends the perfection of the joints and the strength and power of the ligaments. In the first place, the joints are weak and ligaments loose, because they have not been properly exercised, and the muscles are not equal to any amount of work. When a little extra labor falls on them, the

muscles become fatigued and the joints lose their support. Either the already feebled ligaments yield slowly and steadily, as ligaments always yield when exposed to any strain, or owing to some sudden slip the weight of the body falls on them before the muscles can save them, and another injury is the result.

Emphatically, the strengthening of the muscles and ligaments is the perfecting of joint support. While a certain amount of rest is to be recommended, more permanent injury is caused by the injudicious use of the plaster of Paris dressings than benefit obtained by a judicious use of the same. Massage, electricity, passive motion and moderate use is the treatment under these conditions.

Before being able to get the patient to walk, it has been necessary, in some instances of ligamentous relaxation, to apply lateral uprights, jointed so as to allow normal anterio-posterior movement, but checking lateral displacement.

Many times, when we think the joint proper is involved, it is simply *thecitis*, and we are often able to trace the tender tendon from one to six inches from the joint by its tenderness. In spare subjects, the thickened condition of the sheath is plainly seen.

It is the ruptured condition of the sheath that causes the small cyst, better known as *ganglion*, and which was originally in connection with the sheath. It is possible for them to arise from other inflammations, but they more frequently originate in strains. They may, of course, be simple or compound, according to the number. Crushing or removing is easily accomplished; crushing in the simple form and excision in the compound ganglion.

This occasion offers the opportunity to *censure the almost universal use of elastic bandages and stockings.* They cannot possibly increase the strength by improving the circulation, and are therefore useless and injurious in this direction; if they are employed for the swelling, they are thoroughly impracticable, for as they are used and the swelling reduced, the swelling and the elastic are acting in reverse ratio, for, of course, the elastic is becoming less elastic, and the swelling less pronounced, and after the first twelve or twenty-four hours they are utterly useless. If the theory is correct, that lack of repair is due to poor circulation, no further argument is necessary to condemn them.

Tincture of iodine, aside from its mental suggestion, is utterly useless.

Dry synovitis is where the fluid exuded is very small in quantity or may be altogether absent. It is characterized by creaking or grating as the surfaces move over each other. It may be but the faintest sensation of friction, only to be perceived by pressing the hand firmly on the part as if two smooth silken surfaces were being rubbed together, or it may be distinctly audible to those around. It is due to the flakes of fibrin which are greatly increased until they may appear as a continuous layer covering the articular surfaces and forming a deposit of varying thickness on the synovial membrane and cartilages. The fibrin thus thrown out shows a remarkable tendency towards organization. Often by joint movement they are drawn into shreds of unequal length, and are adherent at one or both ends. They may become detached and present themselves in the form of many small bodies, known as loose bodies in the joint.

The strong faradic current seems to greatly stimulate the synovial membrane, and the hot and cold douche is of great benefit, but the *treatment superior to all is massage.*

Œdema often occurs in the lower limbs, especially after the application of plaster casts. It not only occurs after sprains, but fractures and even after protracted recumbency, and greatly retards strength and repair. After the sudden relief of the limb from the pressure of bandages, or when the patient stands erect, there is a sudden increase of blood to the parts. Naturally the vessels are weak and yielding and become dilated, an engorgement of the vessels ensues, causing an increased transudation of the blood serum into the surrounding lymph spaces, peripheral vaso-motor paralysis from pressure is the result, and you have practically the same local pathological conditions to contend with that you have in œdema from other causes.

If we do not assist circulation by supporting the tissues by *systematic bandaging*, this condition will increase and it is most painful, resulting sometimes in ulcer. If we wait for nature to restore proper circulation, it may take months. I have two cases on record where it has existed for years. The longer it exists the more permanent will be the interference of the functions of the vessels and the more organic the condition. Systematic bandaging is indicated. Simple elevation will not do, for as soon as the patient begins to walk the swelling again returns and we have œdema to again contend with. The silk elastic stocking is often applied, but the same objections offered before are applicable here. Frequent reference has been made to massage, but it should be

understood not in the ordinary acceptance of the term, which seems to be a heterogeneous conglomeration of rotary leg pulling and pummelling, and the thousand and one useless manipulations that encumber its practice. It does not mean passive motion or rough manipulation, but is *systematic, gentle stroking, kneading, friction or percussion.*

Briefly, kneading is made by alternate movements of the thumbs or hands, usually varied by squeezing, pinching, rolling or twisting. The general effect upon all the tissues is increased metabolism and absorption of the diseased products.

Frictions are circular manipulations made by the tips of the fingers, by the thumbs or by the hand.

Percussion is made by the flat hand, the fist, the ulnar border of the hand, called *hacking*, or the tips of the fingers. The physiological effect is to stimulate the muscles, nerves, skin, etc.

This description is, roughly speaking, only the main movements, these being again divided into various minor subdivisions.

It is of the greatest importance that the masseur should have a good knowledge of anatomy, physiology, and physics, and have been properly instructed in the various movements. Massage has suffered the fate of other valuable discoveries that have received an impetus from the profession. I fear many have lost their respect for this very important adjuvant because of its abuse by quacks. A very able and scientific article by Dr. Haldor Snévé (*Northwestern Lancet* of January 15, 1896,) has given me a much more comprehensive view of massage. It has taught me to appreciate more fully its usefulness in many forms of impaired circulation and muscular debility.

One more phase of sprains, and a very important one too, is the *disastrous mental impressions* so often encountered.

All of the conditions thus far enumerated in connection with sprains have visible, external manifestations, appreciable to the patient. Any of these conditions are intimations for auto-suggestion or the paralysis of an idea. These functional disorders are usually termed *hysterical* and are referred to as *neuro-mimetic*, terms which are misleading. The common usage of the first has become an expression of opprobrium, and the second, by its derivation, suggests mimicry. However, they exist without deceit, but without any manifestation of mimicry, intentional or unconscious.

A striking illustration is a case brought to St. Joseph's Hospital from a neighboring town. Eight months prior to her admittance she fell on the ice and injured her knee. It was diagnosed and treated by an able surgeon. He did not consider the case a serious one, and probably it was not, but her apprehensive and solicitous friends so worked upon this sixteen year-old girl, by illustrations and personal reminiscences of disastrous results of knee-injuries, that she made no attempt whatever to walk or even move or straighten the limb.

The case was no doubt discussed in her presence, and thought to be altogether too serious to be treated by any local physician. Accordingly, she travelled in the baggage car, upon a cot, as she claimed to be unable to sit up, and she was thus conveyed to St. Joseph's Hospital. Knee slightly flexed, and a little over an inch larger than corresponding member; swelling in foot and leg; there was, however, no effusion, local or general temperature. Her sleep was not in the least disturbed, although a cage was worn over the knee to protect it from the bed clothes. A few weeks of constitutional treatment and isolation, with suggestions and instructions as to the proper use of the limb when beginning to walk, cured the case. This was a *typical so-called neuro-mimetic joint.*

We see many cases, however, in which this nervous phenomenon is not so marked, yet having the same local symptoms as in the case just reported. It manifests itself in people of greater determination of character. Their walk is characterized by a slight limp, or there is a slight impediment to motion, and a disinclination to use the injured joint; there is an expression of pain when the same condition affects other joints.

Concentration of attention upon the affected parts is a most powerful factor in producing and perpetuating the phenomena of functional joint disease. It is extremely difficult to understand the nature of this functional affection. An undiscovered cause exists as incomprehensible as the nerve changes in tetanus or hydrophobia. We should not think of attempting to relieve these cases by uncouth or old-fashioned heroic remedies. Of all cases, they are the most important; they require the greatest patience, experience, skill and scientific knowledge, and they should be trusted only to the honest, conscientious man. The regular practitioner does not realize the clinical significance of the great influence of suggestions. Instead, he treats these cases with indifference, and thus compels them to resort to the charlatan, who many times treats them more wisely than he knows.

Collective Investigation of Antitoxin Treatment of Laryngeal Diphtheria in Private Practice, 1896-897.

In this second and supplementary investigation of the American Pediatric Society the aim has been to ascertain: (1) What percentage of cases of laryngeal diphtheria recover without operation under antitoxin treatment? (2) What percentage operative of cases recover? The report now submitted may properly be limited to answering these two inquiries.

Since the beginning of the general use of intubation, no disease has been more thoroughly observed and more fully reported than laryngeal diphtheria. Operative cases, especially, without hesitation, whether ending fatally or favorably, have been fully and promptly put on record. The result has been a collection and tabulation of cases available for control, such as few diseases offer. There are thousands of intubation cases before the days of antitoxin, and thousands since, available for comparison. It is then to cases of laryngeal diphtheria, especially those requiring operative interference, that we may apply the crucial test of the value of the antitoxin treatment.

Sixty thousand circulars containing the following questions have been distributed:

Age of patient?

Diagnosis confirmed by: (1) Presence of other cases in the family? (2) Appearance of membrane elsewhere? (3) Bacteriologic culture?

How many days and parts of a day after the first appearance of the disease was antitoxin first administered?

How many doses of antitoxin were administered?

Dose of each injection in antitoxin units?

Whose antitoxin used?

Non-operative cases — evidence of disease: Hoarseness? Aphonia? Stenosis?

Operative cases:

1. Intubation? On what day?
2. Tracheotomy? On what day?

How long, in days and fraction of a day, was tube in the larynx or trachea?

Sequelæ (in recoveries): 1. Bronchopneumonia? (2) Paralysis? (3) Nephritis?

Death, cause of, and on what day? (1) Bronchopneumonia? (2) Extension of membrane to the bronchi? (3) Sudden heart paralysis? (4) Nephritis? (5) Sepsis? (6) Accidents of operation?

Recovery?

Remarks, especially on fatal cases?

These circulars were distributed throughout the United States and Canada. * * * The labors of the committee have been much lightened by the uniform good-will of all addressed, more aid coming spontaneously than in the previous investigation. * * *

In order to reduce sources of error it was desirable to bring together a large number of cases, from widely distributed localities, from many different observers and operators, and from a period of time including all seasons of the year. All returns have been examined by the committee, and only such cases accepted as bore satisfactory evidence that they were first of all diphtheria, and secondly that the lesion had invaded the larynx.

A total of 1704 cases of laryngeal diphtheria are ours for the present study. A few cases (228) had not satisfactory evidence that there was laryngeal involvement; indeed, some were reported through misunderstanding the fact that only laryngeal cases were wanted, and a few were reported in which there was no mention that antitoxin was used. These cases are, of course, not included in the number referred to above; 218 of them ended in recovery and only 10 were fatal.

In a total of 1704 antitoxin-treated cases of laryngeal diphtheria, there was a mortality of 21.12 per cent. (360 deaths).

Table of All Cases Showing Age and Result of Treatment.

	Fatal Cases.	Recoveries.	Totals.	Mortality.
1 year and under,	25	35	60	41.66 per cent.
1 to 2 years.....	77	219	296	26.01 per cent.
2 to 3 years.....	81	260	341	23.75 per cent.
3 to 4 years.....	42	216	258	16.27 per cent.
4 to 5 years	47	160	207	22.70 per cent.
5 to 10 years.....	72	345	417	17.26 per cent.
10 to 15 years.....	9	64	73	12.32 per cent.
15 to 20 years.....	2	24	26	7.65 per cent.
Over 20 years	5	17	22	22.72 per cent.
Unknown.....	0	4	4	
	360	1344	1704	21.12 per cent.

Cases Not Operated On.

The first inquiry of the circular was: What percentage of the cases of laryngeal diphtheria recover without operation under antitoxin treatment?

Of 1704 total cases, 1036 were not operated upon (60.79 per cent). Of these, most did not require operative interference; a few cases were thought to require it, but operation was refused. All cases are included, and it will be noted there are no eliminations.

Among the 1036 cases not operated on, there was a mortality of 17.18 per cent. (178 deaths), or, to answer the inquiry of the circular exactly, of 1036 cases not operated on, 82.82 per cent. recovered (or 858 cases).

As good as is this percentage of recovery in so large a number of cases of diphtheria of the severest type, it is believed it is not as good as it ought to be. Cases of laryngeal diphtheria not requiring operation, according to the testimony of consulting intubationists, are seldom heard from a second time, and less often find their way into reports. It was formerly estimated that about 10 per cent. of cases of laryngeal diphtheria recovered without operation. The present report shows that in 1036 cases 82.82 per cent. recovered.

Cases Operated Upon.

In analyzing this class of cases, it is believed a more exact conclusion as to the value of the antitoxin treatment can be arrived at than in the non-operative.

There will be entire harmony of opinion as to the severity of laryngeal diphtheria which requires operative interference. In the early days of intubation it was customary to speak of the percentage of recoveries, and 25 per cent. and 27 per cent. were considered good results. In the last report the recoveries had crept up so high in the one hundred cases that it seemed more natural to speak of the percentage of mortality.

In this connection it is interesting to inquire what were the most reliable statistics of intubation, taking cases as they occurred, without selection, in pre-antitoxin days. In 5546 intubation cases collected by McNaughton and Maddren in 1892, the mortality was 69.5 per cent., or, to bring the facts into line, 30.5 per cent. recovered.

O'Dwyer's personal experience, in private consultation, brings us more nearly face to face with the old-time experience with diphtheria. Note that the following 500 cases came under the observation and care of one practitioner, a skilled operator, extended over a dozen years of time, and therefore included all types of the disease.

Exclusive of the first 100 cases of intubation, which he (O'Dwyer) regards as experimental, the results stand as follows:

2d, . .	100	intubations,	recoveries,	27	per cent.
3d, . .	100	"	"	30	"
4th, . .	100	"	"	26	"
5th, 70 in the	100	"	"	27	"

Total percentage of *recoveries*, 27.56 per cent. When he had reached 70 in the fifth hundred something occurred which carried the phraseology up over the divide, so that it was appropriate to speak of percentage of *mortalities*. At this point in history antitoxin arrived, and interrupted forever the old series. In O'Dwyer's next fifty-nine cases the *mortality* was fourteen deaths, or 23.7 per cent.

In a total of 1704 laryngeal cases there were 668 cases operated upon. In the 668 there were 182 deaths, or a mortality of 27.24 per cent. In the former report, in 553 intubated cases the mortality was 25.9 per cent. In approximate figures there is a difference between $27\frac{1}{4}$ per cent. and 26 per cent.

SUMMARY.

Sixty thousand circulars were distributed throughout the United States and Canada.

Time allowance, the eleven months ending April 1, 1897.

Whole number of cases in this report, 1,704; mortality, 21.12 per cent. (360 deaths).

The cases occurred in the practice of 422 physicians in the United States and Canada.

Operations employed:

(*a*) Intubation in 637 cases; mortality, 26.05 per cent. (166 deaths).

(*b*) Tracheotomy in 20 cases; mortality, 45 per cent. (9 deaths).

(*c*) Intubation and tracheotomy in 11 cases; mortality, 63.63 per cent. (7 deaths).

Number of States represented, 22, the District of Columbia and Canada.

Non-operated cases, 1,036—60.79 per cent. of all cases; mortality, 17.18 per cent. (178 deaths).

Operated cases, 668, or 39.21 per cent. of all cases; mortality, 27.24 per cent. (182 deaths). Two facts may be recalled in connection with this paragraph. First, that before the use of antitoxin it was estimated that 90 per cent. of laryngeal diphtheria cases required operation, whereas now, with the use of antitoxin, 39.21 per cent. require it. Second, that the percentage figures have been reversed—formerly 27 per cent. approximately representing the recoveries, while now, under antitoxin treatment, 27 represents the mortality. To put it in other words, before the use of antitoxin, 27 per cent. recovered; now 73 per cent. recover, and this in the severest type of diphtheria.

The present report will strike many members of the Society as revealing a mortality a little too large in each of the two classes. The mortality is large—larger than the personal experience in private practice of many would expect.

The reasons for this are (1) that antitoxin is still used too late, either from procrastination on the part of the physician, or objection on the part of the friends; or (2) in a half-hearted way which shows itself in doses from one-tenth to one-fourth as large as they should be. In truth, both the physicians and the friends of the patient are timid.

This report, it must be admitted, shows too large a mortality. In the opinion of the Committee it is a larger mortality than will ever be shown again. Antitoxin is gradually being used earlier in the disease, and it will soon be used in sufficient doses.

To the Society, the Committee desires to say that they have sought to carry out their wishes in putting antitoxin on trial, to accept no testimony that did not bear the stamp of reliability; that they have employed the methods approved in the case of the first investigation and report, and that they have confined their work to definitely answering the main questions which the Society and profession now have in mind. Points that were settled in the first report, and have since been corroborated by general medical literature, are not again taken up.

If the Committee is asked to put forth the three most valuable points established in this eleven months' work, they are:

First. The mortality of laryngeal diphtheria at present rests at 21.12 per cent.

Second. That 60 per cent. approximately have not required intubation.

Third. That the mortality of operated cases is at present 27.24 per cent.

W. P. Northrup, M. D.,
Joseph O'Dwyer, M. D.,
L. Emmett Holt, M. D.,
Samuel S. Adams, M. D.,
Committee.

THE COMMITTEE RECOMMENDS:

Antitoxin should be given at the earliest possible moment in all cases of suspected diphtheria.

Quality.—Of the products on the market, some have, by test, been found to contain one-half to one-third the antitoxin units stated on the label. Select the most concentrated strength of an absolutely reliable preparation.

Dosage.—All cases of laryngeal diphtheria, the patient being two years of age or over, should receive as follows:

First dose—2,000 units at the earliest possible moment.

Second dose—2,000 units, twelve to eighteen hours after the first dose, if there is no improvement in symptoms.

Third dose—2,000 units, twenty-four hours after the second dose, if there is still no improvement in symptoms.

Patients under two years of age should receive 1,000 to 1,500 units, the doses to be repeated as above.

Southern States Health Record.

"*Florida Health Notes,*" March 1897, gives some interesting statistics which "show up" the Southern States in a way we had not looked at before. When the United States Census was taken, the question was asked by the Census takers of the head of each family in the United States, how many members of the family had died during the twelve months ending with June. The enumerators did not depend upon treports of physicians or health officers, but got their information direct from the people; and it was as likely to be correct in the South as in the North—in Florida as in Massachusetts. The Census of 1890 also shows that the death rate in the Southern States was lower than in the Northern States—much lower than in the New England and other North Atlantic States—notwithstanding the death rate of the South includes the count of negroes whose mortality is proverbially equal to, if not greater than the birth rate.

The following table tells the story, giving the deaths per 1,000 inhabitants in each of the States east of the Mississippi river during the year ending with June, 1890. For the purpose of comparison, we place the Northern States in a column to the left, while the Southern States are placed in the right-hand column.

NORTH.		SOUTH.	
Rhode Island	21.9	Delaware	18.4
New Jersey	21.0	Maryland	17.3
New York	20.5	Virginia	14.0
Massachusetts	20.1	Alabama	13.0
Connecticut	19.4	South Carolina	13.5
New Hampshire	18.8	Tennessee	12.9
Vermont	16.3	Kentucky	12.0
Maine	15.8	Georgia	11.0
Pennsylvania	14.0	Mississippi	11.5
Illinois	13.9	North Carolina	11.4
Ohio	13.6	West Virginia	10.9
Michigan	11.9	Florida	10.1
Wisconsin	11.1		
Indiana	11.0		
Average North	15.8	Average South	13.0

The States west of the Mississippi, or the majority of them, are of so recent settlement that a comparison with them would be misleading. They were settled by the young and vigorous, and until they are older their death rates will be small, whether the conditions that surround the people are healthful or the reverse.

Florida's death rate is lower than that of any of these States, in spite of the fact that so many sick people go there, and that many of them

die there. The death rate of California, also a health resort, and a younger State than Florida, was 14.7 per 1,000 in 1890, and it was increased by the same cause that increased the death rate of Florida.

The census of 1880 also shows Florida with the lowest death rate of any State east of the Mississippi, and in 1880, as 1890, the death rate in West Virginia was next lowest. The fact that Florida held this enviable record for two decades in succession shows that the conditions for health that surround the people of Florida, summer as well as winter, are the very best.

Preparation of Ligatures for Abdominal Work.

In his "Lectures on the Treatment of Fibroid Tumors of the Uterus," Dr. Franklin H. Martin, of Chicago, thus speaks (page 68–74) of *ligatures* and sutures: "I employ braided silk, silk-worm gut and catgut for sutures and ligatures.

Silk and silk-worm gut I sterilize by boiling, or by steam in the Boeckmann sterilizer. They are placed in small skeins in large test tubes loosely stoppered with cotton, and subjected to a temperature of boiling water for twenty minutes on two successive days when I have no sterilizer at hand, and to the temperature of the superheated steam for a like length of time in my hospital work. I only open at the operation a sufficient number of tubes for the operation in hand—the balance being reserved for future cases. Tubes of silk or silk-worm gut may be prepared in considerable numbers and sterilized by steam with an efficient cotton filter, and afterwards carried to operations anywhere. On opening, the cotton stopper is first burned down low with the tube, then removed, and the skein of material carefully lifted out with sterilized forceps, and placed in sterilized water, when it is ready for use.

"*Catgut is the form of absorbable ligature* which I employ for buried sutures. I have it sterilized in the Boechmann sterilizer with dry heat at a temperature of 284°F. for a period of three hours. Previous to sterilization, the catgut, cut in suitable lengths, is wrapped in oiled paper, one thread in each paper, and the paper enclosed in small, hermetically sealed envelopes. While this accomplishes perfect sterilization, as can be demonstrated by bacteriological tests, it has been argued that sterilized catgut may act as a very favorable nidus for the growth of pathogenic germs in tissues in which it is buried, tissues which without the presence of this perfect sterilized culture medium would be competent to resist the few germs left in the wound, after ordinary surgical precautions had been exerted. For this reason I not only render my catgut aseptic with heat, but I supplement that process by saturating it with non-poisonous antiseptics. According to Arthur Woodward Booth's admirable article in the *Therapeutic Gazette*, December, 1894, he found that pyoctanin blue in a 1 to 1,000 alcoholic solution will render catgut thoroughly antisepic and at the same time impart to it a longer life. Pyoctanin is a much more powerful antiseptic than chromic acid and therefore may be employed in more diluted form. Compared with bichlorid of mercury it is a more perfect germicide, non-poisonous, and it imparts a longer life to the gut. Catgut saturated with pyoctanin becomes an antiseptic suture, the antiseptic of which can in no way prove a source of danger.

The Method of Catgut Preparations.—A skein of catgut is cut into about four lengths. This makes the threads of about forty inches each. Each section of the skein is twisted into a loose knot and they are soaked in ether for twenty-four hours in order to remove the fat. It is then boiled in alcohol, in a closed jar, for an hour in the steam sterilizer. Before boiling in alcohol the bunches are divided into their separate threads and each thread twisted into a little coil. After the sterilization by alcohol, it is carefully removed from the jar by an intelligent conscientious nurse, with sterilized forceps in sterilized hands, to a jar containing a solution of pyoctanin 1 to 1,000 in absolute alcohol. Here it is allowed to remain for twenty-four hours in order to become thoroughly saturated with that powerful antiseptic. I then have it distributed into small wide-mouthed one half ounce bottles, containing oil of juniper. Into each of these bottles about four of the forty inch strands are placed. The bottle is then corked with a rubber stopper and is not opened until it is to be used at an operation, when the catgut is threaded directly from the bottle. The bottle, or several bottles, with their rubber stoppers may be immersed in a 1 to 1,000 bichlorid solution on the instrument table ready to be opened by the surgical nurse in the course of the operation. After it has once been opened I discard any small amount of catgut which may remain after an operation, preferring to use always from a fresh supply.

Instead of boiling the catgut in alcohol it it may be sterilized in closed envelopes in the Boeckmann sterilizer as before described, at a temperature of 284°F., and then treated from that point in the same way as that sterilized by boiling in alcohol.

It seems to me that this is an ideal and

simple method of catgut preparation. There can be no doubt of its absolute sterilization after it has been boiled in alcohol for two hours, or after it has been submitted for three hours to a temperature of 284°F. in the sealed envelopes in the Boeckmann sterilizer.

Dr. Booth found that pyoctanin permeated every fiber of catgut when it had lain in a 1 to 1,000 alcoholic solution of the drug for twenty-four hours. He quotes Sternberg as quoting Jaenicke on the antiseptic properties of pyoctanin as follows: *Staphylococcus pyogenes aureus* restraines by solution of 1 to 2,000,000; *bacillus anthrax aureus* restrained by a solution of 1 to 1,000,000; *Streptococcus pyogenes aureus* restrained by a solution of 1 to 333,000. *In blood serum*, stronger solutions are required.

Thus we have only a sterilized catgut, but we have that sterile catgut thoroughly saturated with an efficient and non-poisonous antiseptic. The juniper oil preserves the catgut indefinitely; it fixes the pyoctanin so that it will not stain the hands, and it keeps the catgut soft and pliable.

The life of the catgut in the tissues prepared by this method is a little less than that prepared by chronic acid, but considerably longer than that prepared by bichlorid of mercury. By placing it in small bottles, it can be handled economically, without the necessity of ever being obliged to open twice the same supply.

Early Recognition and Treatment of Carcinoma Uteri.

Dr. Wm. D. Haggard, of Nashville, Professor of Gynecology and Diseases of Children, Medical Department of University of Tennessee, addresses the classes he has taught from 1884 to 1897 in a very practical, useful way on this subject in the May, 1897, number of the *Southern Practitioner*. It is intended to accentuate the necessity and methods for diagnosis of cancer of the uterus in its incipiency, and to quicken the growing sentiment in favor of early surgical intervention.

Nature seems to allow the disease to linger in its incipiency—even causing the process of ulceration and the peculiar fetid odor to appear as an admonition of danger. This symptom is so characteristic and unvarying in its nature as to be pathognomonic of the disease, and should be sufficiently significant to the experienced practitioner to enable him to make an inferential diagnosis of cancer without a vaginal examination. The cervix is primarily involved in probably 98 per cent. of cases, and the physician frequently has time, even after this symptom, for diagnostic purposes as well as the institution of radical measures for its removal before the surrounding structures become irretrievably involved.

Cancer usually appears in the climacteric decade, between 40 and 50 years of age. The woman who does not know of the danger of malignant disease at this period does not suspect it; hence she does not consult her physician until the disease has made such inroads as to preclude operative salvation. Women should be taught to understand that the menopause brings many dangers. Hence, when approaching the "change of life," they should be induced to consult their doctors. If we could have every woman during her climacteric under competent medical supervision, this prophylactic expedient would be second in value only to vaccination and quarantine.

Every woman should be plainly taught the phenomena of a normal menopause. If there is any abnormality, such as too frequent or too profuse menstruation, or the appearance of a watery discharge—particularly if it be attended with admixture of shreds of tissue resembling the washings from raw beef, and often quickly followed by a fetid discharge of disintegrating tissue, she should consult her doctor at once. The occurrence of frequent, or even occasional sharp, quick uterine pains, should be regarded with suspicion. Recurrences of menstruation months or years after its supposed cessation are also important. Any of these symptoms in connection with the change of life indicate the possibility of malignancy, and require immediate inspection.

As to well-known *methods of diagnosis* which should be employed here, it may be remarked that none of the symptoms, with exception of fetor, is conclusive; they serve only as danger signals. And yet cancer, of all uterine diseases, is most unmistakable. *Digital examination* reveals the indurated cervix, imparts a cartilaginous sense of resistance in the early stages, or the cervix may present the characteristic papillary or cauliflower excrescence feel, or the ragged ulcerated area of varying extent. *Instrumental inspection* reveals the livid exfoliating surface similar to the eversion attending aggravated cases of lacerated cervix. The ulceration has a peculiar yellowish hue, and the vegetations attending the papillary varieties are characteristic. If narcotic destruction has commenced, the peculiar fetid odor, once observed, is so distinctive and characteristic as alone to be sufficient to establish a diagnosis. So that, *practically*, one does not need a microscope *unless the disease begins in the cavity*. Curettings from a suspicious case drop-

ped into alcohol and submitted to the microscopist, have converted a supposedly benign case of endometritis, with metrorrhagia and enlargement of the uterus, into sarcoma, or the malignant form of adenoma.

The question of operability requires answer. The rule which has no exceptions is: No case should be subjected to operation in which all involved structures cannot be removed. No problem in surgery is fraught with so much difficulty as the determination for or against operation in cancer of the uterus. A few general, but well-defined principles that may be relied upon in technical discrimination in the selection of cases. The cervix, where the majority of these maladies originate, is more sparsely supplied with blood vessels and lymph channels than the endometrium or the body of the uterus. It is a general observation that carcinoma may exist there for a considerable time without making inroads by involvement of adjacent tissue to such extent as to militate against the feasibility of complete removal. Uterine cancer lasts from one to one and a half years—exceptionally longer.

The danger of delay in extirpating the diseased organ after the appearance of the disease increases in alarming ratio to each month of its existence. The extent of ulceration is another important matter, but must be taken together with the amount of involvement of peri-uterine tissue. This requires the most careful palpation to discover any glands at the base of the broad ligament, or any induration therein. Supplement bi-manual examination with the middle finger in the rectum for a more thorough exploration. Immobility of the uterus signifies a forbidding amount of secondary deposit in the broad ligaments, or a still more formidable complication, peritoneal adhesions.

The apparently paradoxical rule of Pozzi: "The more limited the disease the more extensive should be the operation," is founded on undisputed pathological data and unquestioned surgical demonstration. "In thus removing the whole of the uterus, the result is certain; there is no opportunity for the disease to recur locally, and we avoid also ganglionic engorgement and invasion of the adjacent tissues."

The most generally applicable surgical procedure is total extirpation of the uterus by the vagina. The immediate mortality is between 2 and 4 per cent. in the hands of an expert. The operation with forci-pressure, in lieu of ligatures, is more rapid and attended with less shock, and is the procedure of election.

Sloughing, resulting from the forceps operation, is conducive to the further destruction of undetected nodules and thereby protects against recurrence.

Coley has had a gratifying meed of success with the toxins of erysipelas and the bacillus prodigiosus in mixed culture in inoperable cases of carcinoma. It seems to have given better results in sarcoma than in carcinoma, but Dr. Haggard does not know that it has been applied to the uterus. He believes many of his readers will live to see the successful application of some form of serum therapy to malignant disease.

In carcinoma of the breast, there are distinct cancerous groupings of cells in the axillary glands so minute as not to be felt. This has led to routine clearing of the axilla of all glandular contents, instead of simple excision of glands appreciably enlarged. The results of amputation of the mamma with this very important addition to the technique have been perceptibly bettered. This principle has been extended to operations for uterine carcinoma. Clark, by ligation of the uterine artery beyond the vaginal branch—thus obtaining a bloodless field of operation—has cleared the pelvis of the connective and glandular tissue in the broad ligaments after removal of the uterus. This operation, so correct in its principle, has yet to demonstrate a decided improvement as to remote results before the objection of its greater danger can be overcome.

To sum up the lessons sought to be inculcated in order to add uncounted years to the span of life in women having uterine cancer:

1. Educate female patients to the danger of cancer at about the menopause.
2. Early interpret suspicious symptoms, and follow by immediate local examination.
3. Use prompt surgical interference in malignant disease.
4. Medical treatment of uterine cancer is neglect; early surgical procedures, prompt and efficient, *rational.*

Treatment of Pneumonia and of Influenza by Large Doses of Digitalis or Digitalin.

Petresco, of Budapest, is known to have been the most earnest advocate of the treatment of pneumonia by digitalis. His contributions have been numerous since 1880, when he first set forth the claims of this method of treatment. As these views have been fully stated in this *Journal*, we shall very briefly sum up his conclusions preparatory to indicating the results of the recent clinical experimentation of Gingeot and Deguy.

It will be remembered that the doses which

Petresco recommends are enormous as contrasted with what has ordinarily been regarded as the safe dose of digitalis, Petresco stating that he does not hesitate in single doses to give as much as three drachms (180 grains) of digitalis leaves in twenty-four hours. He prefers the infusion made with five parts of digitalis leaves in two hundred of water, and then adding forty parts of syrup of orange-peel, the dose then being a tablespoonful every half-hour. He affirms that in general this dose is well borne, and that he has never met with a single case of poisoning. He says that he has had the best results in genuine fibrinous pneumonia, though he has obtained satisfactory results in broncho-pneumonia and in pleurisy. He claims in the most positive manner to have cut short cases of croupous pneumonia, so that within twenty-four to forty-eight hours he has succeeded in obtaining sudden and almost absolute reduction of the temperature to the normal with strengthening of the pulse and general improvement in the patient's condition. The most evident effect is the marked slowing of pulse with increased tension; at the same time disappearance of all the local symptoms of pneumonia can be noted. He enforces the value of this method of treatment by statistics, the mortality of cases so treated with large doses of digitalis being much less than that observable when any other method is employed.

It must be admitted that the medical profession has been slow to adopt this new mode of treatment, and few have had such brilliant results as Petresco claims. Lowenthal's trials in the Vienna hospital were unsatisfactory, the patients (twelve in number) indeed recovering, but with depression and exhaustion increased rather than diminished, and a somewhat lengthened convalescence. Renier's experience in twenty-five cases is very similar to that of Lowenthal. In one of Renier's cases alarming symptoms of collapse lasting for six days came on. He attributed this collapse, which was characterized by cyanosis, sunken face, vomiting, small and intermittent pulse, cold sweat, hiccough and stupor—to the digitalis.

Gingeot and Deguy have published their trials with digitalis in pneumonia and *la grippe* in the *Revue de Médecine* for March, 1897.[1] They do not give the digitalis in the form of infusion, but they use the crystallized digitalin, in a one-per-cent. solution. Fifty drops of this solution contains one milligramme of the alkaloid. To obtain certain and rapid effects, they administer early in the disease, one massive dose of a milligramme, and givs no more medicine of any kind for five or six days. In proceeding thus, they have never observed any untoward accidents. At other times they give smaller doses of digitalin, and repeat them till the desired effect is obtained: thus, instead of the one full dose of fifty drops, they give twenty drops per day for two days, and then stop. But whatever may be the mode of administration of the medicament, it is not desirable to exceed the quantity of sixty drops of the centesimal solution in seven days.

They affirm that the digitalin is particularly efficacious when the pneumonia of influenza is not accompanied with digestive troubles.

In a dozen cases of pneumonia treated by this method, these authors have not had a single case of death, and they have obtained recovery in two desperate cases of double pneumonia. Under the digitalin treatment, the patient generally feels decidedly better the second day after the full dose has been administered; the delirium ceases, the albumin diminishes to soon disappear altogether; the temperature falls and the pulse becomes less frequent but more energetic; the diuresis augments; the congestions are dissipated, and the pneumonic exudate absorbed more rapidly than in cases when the digitalin is not employed. In short, the digitalin accelerates the normal evolution of the malady.

What has been said of frank pneumonia applies also, according to these writers, to the broncho-pulmonic determinations of *la grippe*, and the same treatment is also useful in grave or complicated gastro-intestinal forms, especially when the pulse is feeble, small and rapid.

In case of *la grippe* simulating tuberculosis the digitalin has given better results than any other treatment (quinine, cold baths, antipyrin, etc.). Another fact has been noted by MM. Gingeot and Deguy—the employment of digitalin may render service from the point of view of different diagnosis. They affirm that they have never been able by means of digitalin to obtain an antithermic effect in acute tuberculosis or typhoid fever. On the other hand, in cases of the grip simulating miliary tuberculosis or typhoid fever, the administration of digitalin has always brought on rapid defervescence, while ameliorating the other symptoms.

One of the observations related by Gingeot and Deguy well illustrates the help which this treatment gives towards the differential diagnosis of certain doubtful affections. A patient presented himself for treatment with intense dyspnœa, a decidedly pneumonic aspect and a

[1] See also Semaine Médicale, March 15, 1897.

focus of subcrepitant râles in the right infra-axillary space. The diagnosis of pneumonia in the first stage was made, and thirty drops of the solution of digitalin administered. The next day the condition of the patient was worse, and twenty drops more of the solution were given, but without any improvement in the pulse or general state. The day following, the patient succumbed in coma. The autopsy showed that this was not a case of pneumonia, but of typhoid fever with all the characteristic lesions of Peyer's patches.

The conclusion drawn from the study of this and like facts is that when the administration of digitalin to a person supposed to be affected with pneumonia or influenza does not slow the pulse and ameliorate the condition, there is reason to believe that an error in diagnosis has been committed.—*Boston Med. and Surg. Jour.*, May 6, 1897.

Chyluria—A Case.

Every case presenting a milky appearance of the urine is worth recording in detail until something definite may be established as to its pathology. Wucherer, at Bahia, in 1866 discovered embryo filariæ in chylous urine, and Bancroft, of Brisbane, 1877, discovered the parent parasite in a lymphatic abscess. In 1878, Manson, of Amoy, discovered the embryo in the stomach of the culex mosquito. After the embryos have completed their development in the mosquito, they are supposed to break through the mosquito and escape as free nematodes. Probably these nematodes are swallowed by man with drinking water; and after maturing in the human subject, the parasites select the lymphatic system for their habitat. These parasites in the lymphatics may block up their lumina; and, when near the bladder or the kidneys, may cause varicosities, and finally direct communication with some portion of the urinary tract, thus giving rise to chylous urine. Such is the *supposed* pathology of *parasitic chyluria.* But many cases have been reported in which the most careful search of blood and tissues, and urine, etc., has failed to discover parasite or embryo; so that there are believed to be cases of *non-parasitic chyluria.* The pathology of these cases is as little understood as that of the parasitic variety—everything being supposition; very little demonstration. And yet we all recognize chyluria as a condition characterized by the occasional or continuous discharge of urine which resembles milk when passed, due to the admixture of chyle (or the contents of the lacteals and intestinal absorbents) through some accidental communication. In short, chyluria is taken as an evidence of an obstructive disease of the lymphatic trunks. When allowed to stand for some hours, the urine coagulates into a jelly-mass, reminding one of blanc-mange which, later, separates, like blood, into a clot and a liquid. Ether dissolves out the fat, thus removing the milky appearance. Albumin, however, is developed if the chylous urine is tested by heat and nitric acid.

Further interest attaches to the study of this condition because of the recorded prognosis of text-books generally. While chyluria may, curiously enough, be intermittent and continue a life-time—even lasting for fifty years—death by some intercurrent trouble usually results. Tuberculosis is common. Elephantiasis, phlebitis, hæmaturia, "lymph-scrotum," scrotal abscess, "craw-craw," leprosy, furuncles, elastic tumors in the axilla and groin, lymph vesicles bursting on the abdomen, chylocele, varicocele, etc., are among the complications—some of which may prove fatal. Then, again, sudden death has occurred from no recognizable cause.

Mr. E. Hurry Fenwick (in *Twentieth Century Practice*, Vol. I, p. 655) assumes that chyluria is parasitic—that "treatment is practically *nil*, as the parent worms cannot be dislodged from their habitat in the large lymphatic trunks of the abdomen where, for some reason, they have become located." Manson insisted upon keeping the patient at rest as much as possible so as to give the ruptured lymphatic the best chance of healing. Gallic acid, tincture of iron perchloride, thymol, potassium iodide, turpentine, etc., are mentioned in the books as having effected cures. Decoction of mangrove bark (*rhizophora racemosa*) has cured cases in Guiana, and the seed of the nigella sativa has a like record in India.

Some ten years ago, the Editor of this journal attended a case of apparent catarrhal jaundice, during the course of which chyluria developed, lasted several days, and since then, there has been no evidence of chyluria in the case. The man was a machinist, and lives now in seeming good health.

Dr. Ernest E. Quinn, of Alto, Texas, reports the case (*Louisville Med. Monthly*, May, 1897,) of a man, white, age 38, fair complexion, whose mother, sister and two brothers were enjoying good health when he begun treatment April, 1895. For two years previous, he had been treated for gonorrhœa, rheumatism, sciatica, lumbago, balanitis, etc., but without relief. But the patient says he never had gonorrhœa—that he had not even had an opportunity to contract it. He, however, had sugar in his

urine, and probably this caused the balanitis; while cystitis was, no doubt, due to the highly acid urine, and his "leg-ache" and spermatic pain were due to varicose veins. He also had pains in his back. During the absence of cystitis, his urine was milky in character—this condition intermitting with acid urine and cystitis and leg-ache—but all along the patient followed his farming duties During the chyluria, he had no pain, but pains recurred, with acid urine and cystitis, when chyluria ceased. Acetate and citrate of potash were given a few days without benefit. Then he took—

℞ Fl. ext. ergot.....ʒss
Tinct. gelsemium
Tinct. nux vomica.....āā ʒiij
Strychnia sulphat. .....gr. j
Oil peppermint.. .....min. ij
Fld. ext. gentian .....q. s. ℥iv

M. S. Teaspoonful three times daily.

Also applied tight bandage from foot to above knee, which were worn thirty or forty days, but removed at night. His condition was relieved for a few weeks, when milky urine reappeared. He then went under treatment by another doctor; but after a few weeks, he returned just as he left. He was then put on a general treatment for five or six months, when he was pronounced well. But on December 10, 1896, the patient stated that his chyluria was coming back upon him.

℞ Salol
Potash iodide
Fowler's solution. .....āā ʒiij
Elix. gentian..... q. s. ℥iv

M. S.—Teaspoonful thrice daily.

Also ℞ Sodium salicylate.....ʒvj
Make twenty powders

S.—One in a glass of water, three times daily.

Immediate relief followed, which had continued up to the date of report.

Very Early Ectopic Gestation—Collapse—Operation—Recovery.

Dr. J. F. W. Ross, Professor of Gynæcology and Abdominal Surgery, Toronto, reports the following rare case in the *Canadian Practitioner*, April, 1897:

Mrs. S., æt. 28. One child fifteen months old. Menstruated once after birth of child, then went five weeks—that is, up to the time she was taken ill with the symptoms of the rupture. There was no uterine hæmorrhage in the interval nor at the time of the rupture. Patient doing her work as usual until between three and four o'clock in the afternoon, when she felt pain in the side. Had no idea there was anything wrong with her up to this time A frequent desire to pass water came on. She got up to move about and fainted. She then lay down again, and endeavored two or three times to move around, but, faintness coming on, she was unable to do so. The pain then disappeared, and she felt as if there was not much the matter except that she was weak. The neighbors, however, became alarmed, and advised her to send for the doctor. This was done at 11 P. M. of the same day.

Dr. Rowan found her suffering from considerable precordial uneasiness. She looked pale; was bathed in cold perspiration and felt extremely weak. She was pulseless at the wrist. The pain in the abdomen had disappeared. Dr. Ross arrived at a quarter to one in the morning. Patient pulseless, though the heart was beating 100 in the minute. As it is frequently expressed, "the bottom had fallen out of the pulse," so that it could not be felt at the wrist. The patient looked blanched, and it only took a few seconds to confirm the diagnosis of Dr. Rowan. Urine had been passed before the onset of the symptoms, but none passed since. Dr. Ross has frequently noticed suppression of the urine in these cases. The abdomen was slightly distended. By percussion, intra-abdominal fluid was diagnosed. The dullness was slightly moveable with change of position, as frequently happens when the abdomen is filled with blood, more or less clotted. The patient was lying in bed with her clothes on just as she had fainted in the afternoon.

On vaginal examination, could feel no mass on other side of uterus, but thought he could feel blood-clot break down under the finger when pressing against the downward bulging cul-de-sac of Douglas from the vaginal side. There was no time to be lost. Husband agreed that his wife should be immediately moved to the hospital. The patient was carried out by the husband, the cabman, and Dr. Ross, after telling the husband that his wife might possibly die on the way; but this was the only chance to save her life.

In a short time we were at the hospital; patient was carried in and prepared for immediate operation. The anæsthetic, ether, was administered with the greatest of care. As patient was pulseless at the wrist, it was no easy matter to give it, and as little was used as possible, scarcely more than enough to deaden the pain of the incision through the skin and to prevent straining. The patient was so collapsed that she seemed scarcely sensible of pain. With a couple of cuts, the peritoneal

cavity was entered, blood began to ooze out, fingers were passed down to the left tube, where Dr. Ross thought he felt a slight roughness of the surface. They were then passed to the right tube; nothing could be felt. He was then certain that the rupture was in the left tube. Fingers were passed down to the left tube again, and this was drawn to the surface, rapidly ligated and removed, together with the ovary. Right side was not interfered with. The blood was washed out, while he placed the sutures. A drainage tube was placed and the wound closed. Only a few minutes until the operation was completed, and the patient was ready for removal from the table. The ether and the hypodermics that had been previously given seemed to stimulate the pulse. Patient was placed back in the ward and the husband advised to remain all night. Frequent saline injections were given per rectum, hypodermics of digitalis and strychnia and brandy were given every hour. The patient gradually began to mend. Convalescence was somewhat slow but very satisfactory. She left the hospital in four weeks.

The left tube has a small perforation near the uterine end. The ectopic gestation was no larger than an ordinary white bean, so that rupture in this case was very early.

Cocaine and Ichthyol in the Treatment of Fissure of the Anus.

M. Jules Chéron has always obtained good results (*Gaz. de Gynécol.*, *Feb.* 1, 1897,) by means of the following treatment: The anus being partly opened and the fissure discovered, a small tampon of absorbent cotton saturated with a 1 per-cent. solution of cocaine hydrochlorate is applied. At the end of five minutes local anæsthesia is obtained, and the fissure can then be touched with pure ichthyol. This procedure is renewed on the following days. After the fourth or fifth application, the tampon of cocaine is introduced as far as the internal sphincter, and at the end of five minutes it is possible to make a slight dilatation of the anus with Nélaton's dilator. In this way the fissure is distinctly exposed to view and can be thorougly touched with ichthyol. The dilatation is more easily affected as cicatrization advances, and it may gradually be increased until the disappearance of stricture of the sphincter, which so frequently complicates fissures of long standing, is an accomplished fact. Recent fissures may be cured by ten applications of this treatment, but old fissures, the borders of which are more or less callous, require a longer time for recovery; it is rarely necessary, however, to make more than twenty applications. *Universal Med. Jour.*, April, 1897.

Book Notices.

Diseases of the Ear, Nose and Throat, and Their Accessory Cavities. A Condensed Text-Book. By SETH SCOTT BISHOP, M. D., LL. D., Professor in the Chicago Post-Graduate Medical School and Hospital, Surgeon to the Illinois Charitable Eye and Ear Infirmary, Consulting Surgeon to the Illinois Masonic Orphans' Home and to the Silver Cross Hospital of Joliet, etc. Illustrated with 100 Colored Lithographs and 160 Additional Illustrations. Royal Octavo. Pp. xvi—496. Extra Cloth, $4.00, net; Sheep or Half-Russia, $5.00, net. The F. A. Davis Co., Publishers, 1914 and 1916 Cherry street, Philadelphia; 117 W. Forty-Second street, New York; 9 Lakeside Building, Chicago.

The age is growing more and more practical. There is a less and less disposition to deal in technicalities; for the truly great man has developed his greatness by bringing simplicity out of confusion of terms and statements. Such a book as the one before us shows how plain and attractive a subject may be made by an author who thoroughly understands it himself and who has constant practical dealings with it. We do not know of any book on the specialty of diseases of the ear, nose and throat and their accessory cavities, that more satisfactorily simplifies their diagnosis and treatment. With reference especially to emergency cases and operations about the parts named in this book, we would especially advise *general practitioners* to keep themselves constantly informed; and this work, well studied, will furnish the desired information for them. But some of the diseases, such as diphtheria, that general practitioners know, perhaps, as much about as throat specialists, receive more attention than the facts justify. General practitioners have long enough ago learned the value of serum therapy in diphtheria to make it rather amusing than otherwise to see book-makers still discussing whether antitoxin is valuable or not. So that the greater part of the 23-page chapter on "Serum Therapy" seems better suited to a work on the history of medicine than to a work that represents the practice of medicine of to-day. While we note the recommendation of Prof. Joseph A. White's palate retractor, we were surprised to find no other reference to him or to Prof. John Dunn—both of this city—or to Prof. Calhoun, of Atlanta, as to some of their original work or opinions—since these gentlemen, along with Dr. Cheatham, of Louisville, and a few others, are representative of Southern practice in diseases of the ear, nose and throat. But these criticisms are too narrow to materially affect the general

excellence of the book, which is well suited either as a text-book for colleges or as *the* book on diseases of the ear, nose and throat needed by the general practitioner. Of course, special practitioners in this department will take the book.

The Diseases of the Stomach. By DR. C. A. EWALD, Extraordinary Professor of Medicine at the University of Berlin; Director of the Augusta Hosital, etc. *Translated and Edited, with Numerous Additions, from the Third German Edition.* By MORRIS MANGES, A. M., M. D., Assistant Visiting Physician to Mount Sinai Hospital; Lecturer on General Medicine at the New York Polyclinic, etc. *Second Revised Edition.* New York: D. Appleton & Co. 1897. 8vo. Pp. 602—xx. Cloth.

Such is the rapid progress of improvement in nearly all branches of medicine at this time that a book of even four years of age is "clear out of date." So that the former edition of this great work can no longer be referred to as authority; we must substitute the edition now on the table. Indeed, we are told by the *Translator* that even since Dr. Ewald issued the edition in Germany, from which the second American edition is translated, so many advances have been made as to necessitate numerous interpolations, foot-notes, etc., by the translator himself. The amount of new material may be surmised when informed that whatever seemed obsolete has been stricken out, and that thorough condensation of the text of the former edition has been attempted; *and yet*, the present new edition contains over one hundred pages more. The additions made by the author have been incorporated in the text, while those of the translator appear in brackets or else in foot-notes. Advantage has been taken of the opportunity also to rearrange the order of the chapters so as to make the book more systematic in its presentation of subjects. The great values of this book are the thoughtful analysis of symptoms, and the specially helpful sections on diagnosis; for in every-day experience we are kept reminded that "only the most careful and thorough consideration and weighing of *all the symptoms* which can be obtained, *with all the diagnostic resources*, will enable us to recognize the existing disease." In therapeutics, we find this edition especially rich; and the chapter on this subject becomes the more useful in that it contains the further experience of the authors. We find in this edition also, that additional illustrations have been introduced which materially improves the book for all practical purposes. It would be idle, in the limited space at our command, to undertake a review of the book. But the author is too widely known to call for more than the announcement that this last edition has been ready some months, and that it is, in every respect, a great improvement on the former edition.

Twentieth Century Practice. Edited by THOMAS L. STEDMAN, M. D., New York City. *In Twenty Volumes. Vol. IX. Diseases of the Digestive Organs.* New York: William Wood & Co. 1897. Large 8vo. Pp. 820. Cloth. $100 for the Twenty Volumes, or $5 on delivery of each Volume.

The tenth volume of this "International Encyclopedia of Modern Medical Science, by Leading Authorities of Europe and America," was noticed some weeks ago, when, in natural order, this *ninth* volume should have been been issued; but some delay in receiving manuscripts by the publishers accounted for that. The present volume considers "*Local Diseases of the Mouth*," by Drs. Johann Mikulicz and Werner Kummel, of Breslau; "*Diseases of the Intestines* (*excluding* infectious diseases, parasites and hernia), by Dr. C. A. Ewald, of Berlin; "*Hernia*," by Drs. Virgil P. Gibney and John B. Walker, of New York; "*Diseases of the Spleen*," by Dr. Alfred Stengel, of Philadelphia; "*Diseases of the Liver*," by Drs. Mariano Sammola and Carlo Gloffredi, of Naples; "*Diseases of the Gall Bladder*," by Dr. John B. Murphy, of Chicago; and "*Moveable Kidney*," by Dr. Kendal Franks, of Johannesburg, S. A. Republic. While naturally one would be more apt to search surgical books for literature on the treatment of moveable kidney, on the *surgical* treatment of gall-bladder troubles, of hernia, etc., the fact that these subjects are so well treated in a medical book, only adds an extra value to it for the purposes of the general practitioner. We cannot, in literature, point to a better *exposé* of diseases of the intestines (excluding infectious diseases, parasites and hernia), than the 175 pages in this volume by Professor Ewald. The chapter would form a companion book to this great author's work on "Diseases of the Stomach," if the range of subjects had been extended to include those infections which leave their chief impress on the intestinal canal. The section on "Diseases of the Liver" is also well written, and they are well discussed from the practitioner's standpoint of diagnosis and treatment. No one could have done better on such a subject as "diseases of the spleen," from the standpoint of the *physician*, than Dr. Stengel has done.

Oftentimes it is the province of the physician to make the diagnosis only, and then either prepare the patient for his helpless condition or turn the case over to the surgeon. The chapter on "Local Diseases of the Mouth" suffers only when brought into comparison with the other most excellent practical chapters of this volume. Indeed, all in all, we look upon this volume as one of the very best of the series thus far issued. Illustrations are inserted where most needed, typography is good, and the general style of the book is attractive.

Lectures on the Treatment of Fibroid Tumors of the Uterus—Medical, Electrical and Surgical By FRANKLIN H. MARTIN, M. D., Professor of Gynæcology, Post-Graduate Medical School of Chicago, Surgeon to Woman's Hospital of Chicago, etc. Chicago: The W. T. Keener Co. 1897. Small 8vo. Pp. 174—iv. Cloth. $1.00, net.

It is seldom that we find surgeons giving much attention to other than the surgical treatment of conditions. But here we have an exception. While the object of the author is to place in permanent shape the outcome of the past decade of work, and to mirror the present status of the treatment of fibroids of the uterus, he has so arranged his chapters as to give the whole subject special interest to the general professional reader—even going far back into history. Lecture I. considers the anatomy, histology, varieties, etiology, spontaneous disappearance, etc., of uterine fibroid. Then come lectures on symptoms and diagnosis; on *treatment*—general conditions—medical treatment; on ergot; electricity; on surgical environments—operating-room, sterilizing instruments, ligatures and hands, catgut preparations, preparatory and after-treatment of patients, drainage, etc.; on the author's operation of vaginal ligation of the broad ligament and other minor operations; on removal of the uterine appendages; on vaginal hysterectomy, and on abdominal hysterectomy. With reference to the extra-peritoneal method of abdominal hysterectomy, we note that proper credit is given to Dr. Joseph Price (of Philadelphia) for improving this method "until it is well-nigh perfect. His success with it has been phenomenal." Of course, full detail is made of the author's operation of vaginal ligation of the broad ligament, etc. We have read many monographs on the subject of uterine fibroids and their treatment, but nowhere do we recall a better description of methods or a fairer statement of results. This is a valuable, useful book.

Editorial.

Buffalo Lithia Water Solvent of Urinary Calculi.

That the free use of Buffalo Lithia Water is a most valuable agent in the therapeutics of the lithæmic or uric acid and the gouty diatheses scarcely needs additional confirmation. The recorded experience of Drs. Hunter McGuire, Allard Memminger, H. C. Wood, J. Herbert Claiborne, John T. Metcalf, John H. Tucker, Alex. B. Mott, John V. Shoemaker, Chas. B. Nancrede, Cyrus Edson, Lewis D. Mason and hosts of other eminent clinicians attest this. But the claim that this Water is a *solvent of urinary concretions or calculi* in the kidney and bladder—that it disintegrates and washes them out of the bladder—seemed too enthusiastic for some to accept. This claim was put to the surest of practical tests last winter, when fragments of calculi passed by patients who had for some time been taking Buffalo Lithia Water, were subjected to analyses by three of the most able and distinguished chemist of the world. Dr. A. Gabriel Pouchet, Professor of Pharmacology and Materia Medica, Faculty of Medicine of Paris, etc., advises the use of the Water of Spring No. 2, to disintegrate and eliminate vesical or renal calculi; and, in a recent pamphlet on Buffalo Lithia Springs, he presents eight illustrations from photographs of disintegrated calculi passed by as many patients while under the influence of the Water. Dr. R. Ogden Doremus, Professor of Chemistry in Bellevue Hospital Medical College, New York, photographs some fragments of calculi disintegrated and eliminated by the use of Buffalo Lithia Water, Spring No. 2. Dr. John Attfield, F. I. C., Professor of Practical Chemistry to the Pharmaceutical Society of Great Britain, and the distinguished author of the *Manual on Chemistry* used generally as the text book in academic, medical and pharmaceutical colleges of this and foreign countries, likewise by his analyses of five specimens shows that the calculi were disintegrated and eliminated "by patients while drinking the waters" In addition, every day professional and clinical observation confirms the facts named. These Waters have now been prominently before the profession for forty years or more. Were they unable to meet the claims made for them, their use by prescription would long since have been discontinued. This is too practical an age to perpetuate the use of agents that have been tried and found wanting. But the demand

for Buffalo Lithia Water, for the purposes named—especially that of Spring No. 2—has steadily increased, until now, nearly the full supply from the Springs is daily consumed. It is the great value of Buffalo Lithia Water in the conditions referred to that has caused the opening up of springs and wells in all parts of the country, trying in vain to attain a comparable record.

The International Association of Railway Surgeons

Is the recently changed name of the National Association of Railway Surgeons, which held its Annual Session in Chicago, May 4–6, 1897. Now the Association includes representatives of the Surgical Staff of Canadian and Mexican Railway Companies, as well as those of the United States. We recognize it as a specical compliment that this Association should have chosen Dr. George Ross, of Richmond, Va., former Medical Director or Chief Surgeon of the Piedmont Air Line—now Southern Railway Company—as the first President of the *International* Association. He is to preside at the meeting of 1898—May—in Montreal, by which time his executive ability will be known to all members of the Association that has done him honor. His acceptance speech was in impromptu verse, and many of the stanzas would do credit to some of the illustrious poets of the age. Rarely do we find one so practical in conducting business affairs who combines such qualities or genius as we find in this first President-elect of the International Association of Railway Surgeons. Richmond has a peculiar right for self-praise in that Dr. Ross is the second President it has furnished to the Association.—Dr. Chas. W. P. Brock, of Richmond, Medical Director of the Chesapeake & Ohio Railway Co., having been President of the Association three or four years ago, and presided with distinction during the session in Omaha.

Professor of Chemistry, University College of Medicine, Richmond.

Dr. William R. Jones, who has so well filled the chairs of Professor of Chemistry in the School of Pharmacy of the Universtity for the past three years, has been nominated to the Board of Directors by the Faculty for their official election as Professor of Chemistry in the School of Medicine as well—the resignation of Dr. F. S. Harker, on account of impaired health, having been accepted. In short, Dr. Jones is to be the Professor of Chemistry of the University College. Professor Jones now proposes to make Chemistry his life-work.

The University College of Medicine, Richmond, Va.,

Held its Fourth Anual Commencement exercises at the Academy of Music on Thursday, April 29th, 1897.

The President of the University, Dr. Hunter McGuire, delivered diplomas to the following fifty-one *graduates* in the three departments.

DOCTORS OF MEDICINE, 39.

J. C. Bodow, Jr., Sanford, Fla.;
B. Bridgeforth, D. D. S., Richmond, Va.;
Geo. A. Brown, Bear Poplar, N. C.;
E. G. Brumback, Hope Mills, Va.;
C. T. Carter, Danville, Va.;
H. R. Carter, Ashland, Va.;
W. T. Chitwood, Rocky Mount, Va.;
H. M. DeJarnette, Lewiston, Va.;
C. F. Eason, Hickory, Va.;
Richard Ferguson, Jr., Rustburg, Va.;
A. G. Franklin, Jr., Richmond, Va.;
N. W. Francis, Ormond, Fla.;
W. B. Fuqua, Fork Union, Va.;
J. H. Hartwell, Roanoke, Va.;
L. O. Hays, Wilson, N. C.;
G. S. Kirby, Lenoir, N. C.;
T. M. Lippitt, Berryville, Va.;
H. H. McGuire, Winchester, Va.;
T. K. McKee, St. Clair's Bottom, Va.;
J. O. Matthews, Taylor's Bridge, N. C.
W. F. Merchant, Manchester, Va.;
R W. Miller, Cambridge, Pa.;
C. L. Moore, Richmond, Va.;
McGuire Newton, Richmond, Va.;
H. G. Nicholson. Oakville, N. C.;
M. E. Nuckols, Richmond, Va.;
F. M. Parker, Enfield, N. C.;
W. L. Peple, Richmond, Va.;
H. W. Phillips, Norfolk, Va.;
A. C. Ray, Norfolk, Va.;
S. L. Rucker, Scruggs, Va.;
J. E. Smithwick, Jamesville, N. C.;
A. K. Tayloe, Washington, N. C.;
R. F. Taylor, Mannboro, Va;
J. P. Williams, Bane, Va.;
W. C. Williams, Richmond, Va.;
John B. Winfield, Sperryville, Va.;
A. B. Woolwine, Pearisburg, Va.;
W. D. Woolwine, Pearisburg, Va.

Degrees were next conferred on the following as *Doctors of Dental Surgery*—7:

H. W. Barksdale, Charlottesville, Va.;
L. L. Dameron, Jr., Hobton, N. C.;
E. M. Hardy, Richmond, Va.;
T. D. Hubbard, Cedar Forest, Va.;
J. P. Keech, Tarboro, N. C.;
W. H. O. McGehee, Richmond, Va.;
W. D. Willis, Richmond, Va.

The President then delivered diplomas to the following *Graduates of Pharmacy*—5:

A. T. Gray, Richmond, Va.;
W. H. Gwinn, Green Sulphur Springs, W. Va.
W. L. Lyle, Bedford City, Va.;
B. S. Preston, Richmond, Va.;
H. H. Robinson, Elizabethtown, N. C.

The *Honorary Degree* of Doctor of Medicine was, some weeks ago, ordered to be conferred on George Foy. F. R. C. S., of Dublin, Ireland.

Hospital Appointments were announced as follows: Dr. M. E. Nuckols, Richmond City Almshouse; Drs. J. C. Bodow and W. Lowndes Peple, St. Luke's Home: Drs. H. G. Nicholson and C. L. Moore, Virginia Hospital; Dr. John B. Winfield, Retreat for the Sick; Dr. I. N. May, Richmond Eye, Ear, and Throat Infirmary.

Medical Prizes were awarded as follows: Dr. Marvin E. Nuckols, Gold medal, given by the Faculty for the highest average attained during the whole course; Dr. H. G. Nicholson, Prize given by the Powers-Taylor Drug Co. for the best Essay on *Ileus;* Dr. A. Chambers Ray, Case of surgical instruments presented by Messrs. Bartlett, Garvens & Co., Richmond, Va., for the highest average in surgery; Dr. C. L. Moore received Dr. Joseph A. White's prize for the best notes on his lectures on diseases of the eye; Dr. W. Lowndes Peple, Case of instruments given by Dr. Hunter McGuire for the best report of one of his clinical lectures; Dr. Guy V. Kirby, Prize given by Dr. J. F. Winn for the best notes of his lectures on obstetrics; Mr. S. B. Claybrook, of the second year's class, received Valentine Meat Juice Company's prize for the highest average on materia medica; Mr. B. M. Hillsman, of the second year's class, was awarded a prize given by Dr. Stuart McGuire for the best notes on his lectures on principles of surgery.

Dental Prizes were awarded as follows: Dr. W. D. Willis, Gold medal given by the Faculty for the highest average attained during the whole three years' course; Dr. H. W. Barksdale, Prize given by Prof. L. M. Cowardin for the best Essay on *Diseased Pulps.* Dr. Barksdale also won the prize given by Prof. C. L. Steele for the best specimen of bridge work. Dr. T. D. Hubbard won the Grant prize for the best gold filling.

The Pharmacy Department awarded prizes to Mr. B. S. Preston, Gold medal given by the Faculty for the highest average attained during the whole course; Mr. A. T. Gray received the Purcell, Ladd & Co.'s *senior* prize for the best practical work; Mr. J. H. Webber was given the Purcell, Ladd & Co.'s *junior* prize for the best practical work; Mr. W. A. Keeling, prize given by the Faculty for the highest junior average; Mr. H. H. Robinson, Virginia Pharmacal Co.'s prize for the highest average on chemistry.

After the presentation of prizes, etc., the orator of the occasion, Hon. Walter Clark, of Raleigh, N. C., was introduced. His address related mostly to the influence of the educated classes of to-day in molding the legislation of the near future. His great ability as a jurist of the Supreme Bench of North Carolina, and his power as a speaker, held his audience in attention for nearly an hour.

Immediately after the exercises at the Academy, the faculty and the graduates in *the several departments*, together with the alumni and invited guests, adjourned to the Jefferson Hotel, where a splendid banquet was served, and toasts were responded to till the early hours of morning. It was a grand occasion.

During the morning, the *Alumni Association* held its annual meeting in the College building. The annual address was delivered by Dr. Wm. S. Gordon, Professor of Physiology, who took as his subject, "*Heredity as an Etiological Factor in Diseases.*"*

The discussion which followed was indulged in by Drs. Stuart McGuire and Landon B. Edwards.

The following *officers* were elected for the coming year: *President*, Dr. Henry A. Wise, of Williamsburg; *Vice-President*, Dr. E. C. McSparran, of Richmond; *Secretary and Treasurer*, Dr. H. H. McGuire, of Winchester; *Leader of Discussion, Session* 1898, Professor J. Allison Hodges.

A number of business matters were gone through with, and then the meeting adjourned.

The total number of matriculates during the session just ended was 274, representing about a dozen States. As the number of students overcrowded some of the lecture halls, and as the indications point to even larger classes next fall, the Faculty has decided to begin some additional buildings at once, which will be equipped and ready for use on or before October 1st, 1897. The cost will be about $25,000. Work on the foundation is to begin this week. These buildings will be a part of the proposed permanent building, plans for which have been drawn and decided upon.

Special Exercises at the Jubilee Meeting of the American Medical Association.

Dr. John B. Roberts, Chairman of the Committee on Anniversary Exercises at the Jubilee

* The paper in full appears in this issue.

Meeting of the American Medical Association, announces that the Committee of Arrangements has set aside an hour on the second day of the meeting for exercises to commemorate the founding of the Association in Philadelphia in 1847. The founders of the Association believed that it would raise the standard of medical education and combine the medical profession of the United States in one body. Dr. Davis, who is recognized by all as the moving spirit in the enterprise, will read a short paper, giving an account of the origin of the Association and how the objects for which it was founded have been attained. The Committe has taken steps to secure the attendance at the meeting of the Presidents of the State Medical Societies and the Presidents of the State Boards of Medical Examiners, as an illustration of the success attained through the instrumentality of the Association.

In addition to the address of Dr. Davis, there will be two or three short addresses to add to the interest of the occasion. It is desired that the Presidents of all State Boards of Examiners and of all State Medical Societies meet Dr. Davis a few minutes before his address in order that they may escort him to the stage. In the event of the President of any one of these organizations not being able to attend the meeting, he is requested to send as an alternate, one of the ex-Presidents, in order that every State Society and every Examining Board may be represented upon this notable occasion.

Of the original members of the Association there are still living, Dr. N. S. Davis, of Chicago; Dr. Alfred Stillé, of Philadelphia; Dr. John B. Johnson, of St. Louis, and Dr. David B. Atwater, of Springfield, Mass. The Committee hopes that these gentlemen will all be present to take part in the meeting.—*Columbus Med. Jour.*, May 11.

The American Public Health Association

Will hold its 25th Annual Session in Philadelphia, Pa , October 26–29, 1897, under the Presidency of Dr. Henry B. Holbeck, of Charleston, S. C. The Secretary, Dr. Irving A. Watson, of Concord, N. H., has issued a preliminary announcement giving the topics for consideration and general information concerning the meeting. Dr. Benj. Lee, 1532 Pine Street, Philadelphia, is Chairman of the Committee of Arrangements.

Professors William H. Welch and Wm Osler

Will not accept the flattering tender of chairs in the New Medical School of New York, although such salaries have been offered them as have never before been offered by such an institution. They will remain in Baltimore, and continue their professional duties in Johns Hopkins Hospital.

Obituary Record.

Dr. John C. Terrell

Died March 28, 1897, at his home in Philadelphia, Pa., at the ripe age of 80 years. He was a native of North Carolina. After graduating in Medicine from the University of Pennsylvania in 1840, he returned to North Carolina, and for many years practiced his profession in Roxboro, in that State. Some years ago, he gave up practice, and for business reasons moved to Philadelphia. His love for his mother State and the county of his early professional life, was shown in the bequest of $50,000 to the Public Schools of Person county, N. C. In addition, he left a sufficient sum of money to erect a new school building in each of the twenty-nine townships of the county.

Lactic Acid for Summer Diarrhœa in Children.

Dr. F. J. Bowles says (*Indian Lancet*, April, 1) that, during the hot weather of last summer, he treated between sixty and seventy cases of "summer diarrhœa" in children, ranging in age from a few weeks to three years. The cases were, in every way, such as are met with in the crowded tenements of large cities during the heated term. He used lactic acid in every case. The maximum dose was one grain and a quarter, given every hour. The result was the disappearance of all symptoms in from twenty-four to forty-eight hours. The only medicine given beside the lactic acid was an initial dose of calomel where it was indicated.

He was led to report this fact because of a quotation from *Journal des Practiciens* in support of the administration *of lactic acid in the treatment of cholera morbus.*

Milk—Prophylactic of Scarlatinal Nephritis.

Ziegler says, (*La Semaine Medicale*) that in more than a hundred cases of scarlatina seen in the course of six years, in which patients were for three weeks kept upon milk diet, he has not once encountered nephritis as a compliaction.—*Indian Lancet*, April, 1.

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APHASIA, WITH REPORT OF CASE.*

By ROBERT J. PRESTON, M. A., M. D., Marion, Va.,
Superintendent Southern State Hospital.

Aphasia is a "general designation for various forms of defect, manifested in the various modes of expression, just as anæmia is applied to various forms of deficiency of blood."

Precise knowledge of the effects of local disease on the various relations of language is uncertain. "The subject abounds in difficulty arising partly from its complexity and partly from the uncertainty due to the deficiency of fact and the obscurity produced by a redundancy of theory." (*Gowers.*)

Speech centres are located in the left hemisphere of the brain, in right-handed persons; but in the right hemisphere in left-handed persons. The brain structure, however, is similar in each hemisphere, and loss of function in the left hemisphere may be more or less compensated for, after a time, by the right hemisphere.

"Speech processes in the cortex of the brain are sensory and motor. By the former, language is received; by the latter, it is uttered." Hence, aphasia is chiefly either "*motor aphasia*" or "*sensory aphasia.*"

"*Motor aphasia*" is caused by a lesion in the posterior part of the left third inferior frontal convolution and the adjacent part of the ascending frontal convolution. Destruction of this motor speech region causes total or almost total loss of voluntary speech. As before said, compensatory use of the same structures in the right hemisphere may occur after a time. "Motor aphasia" may be produced by disease of the conducting path from the cortex as well as by disease of the cortex itself.

"*Sensory aphasia*" is caused by a lesion in the posterior half of the left "temporal convolution (auditory centre) and in the lower and hinder part of the parietal lobe" (visual centre), as the sensory relations of speech are with hearing and sight. *Sensory aphasia*, or *word deafness*, always causes considerable derangement of speech; sometimes as much formal disorder or ataxy of speech as in motor aphasia. In *sensory aphasia*, or word deafness, the patient is unaware of his errors, while in *motor aphasia*, the patient at once recognizes his mistake, and is annoyed by them.

"In addition to the above leading varieties of aphasia—the motor and sensory—there is another, in which the patient, without loss of the motor processes, and without word deafness, has a difficulty in recalling words, and uses wrong words. This has been termed "*amnesic aphasia*," or loss of memory for words, produced, it is supposed, by an interruption of the path between the motor and sensory centres, by disease of the "Island of Reil."

Visual aphasia is the defect that accompanies word blindness. *Total aphasia* is the form in which both auditory and motor centres are destroyed and all use of words is lost.

Persistent aphasia may be produced by any kind of lesion affecting the speech centres, but acute softening of the brain is said to be the most common cause; other causes are hæmorrhage, embolism, tumors, chronic senile softening, etc. Obstruction of the middle meningeal artery (which results in softening) is also said to be the most frequent cause of aphasia. This artery supplies the speech centres.

Motor aphasia is produced by softening due to obstruction of the first branch of the middle meningeal artery; *sensory aphasia* by that of the fourth branch. The motor centres situated in the central frontal convolutions are chiefly supplied by the second branch; hence hemiplegia is often associated with aphasia.

Acquired syphilis is a very common cause of acute softening of the brain occurring in adult life. About half the cases of acute softening occur between thirty and forty years of age.

*Read before American Medico-Psychological Association, Baltimore, May 12, 1897.

In the light of the above facts, collated and condensed chiefly from the best authorities at hand, a report of the following case may prove of some interest.

Case.—G. S., æt. 38, was admitted to the Southwestern Virginia Hospital December 30, 1895, suffering from partial hemiplegia, affecting the right side of the body, and accompanied by considerable mental disturbance and marked motor aphasia. The depositions in his case state that "he is married; has no children; occupation, clerk and statistician—has done some clerical work in the N. & W. R. R offices. The first indications of insanity appeared June 3d, 1895, after a debauch in the city of Knoxville, during which, from an imperfect history, he is said to have received a blow on the head from a policeman's club, and a fall on the curbstone, striking his head. He was said to be unconscious for some time. The symptoms of insanity following were feebleness of mind, inability to express himself in words that could be understood, headstrong on business subjects, constitutional weakness, threatened to kill his relatives attending him. Symptoms appear to increase. His parents and grand parents were not related before married. No heredity. Supposed cause stated was, that it followed a stroke of paralysis. He has had eruptions thought to be due to venereal disease; has been on alterative and tonic treatment.

On admission to the Hospital, his bodily condition was fair; general health fairly good; partial hemiplegia affecting the right side of body—almost complete in right arm, not so much in the right leg; walks with a hesitating, tottering gait; has marked motor aphasia; sight unimpaired, but hearing slightly impaired on both sides, more so on right; bodily organs, for the most part, in healthy working order. Has urethral stricture, which yields readily to treatment; patella and other reflexes on right side exaggerated; there is a scar two inches long on left side of head, and some unevenness of the bone over the left inferior frontal convolutions. There is no paralysis of the muscles of lips, tongue or glottis.

He was placed upon specific treatment (iodid. of potash and bichlor. mercury, with tinct. cinchona) and good nourishing diet. Under this treatment, alternated at times with tonics and electricity to affected limbs, some improvement was manifested during the spring and summer of 1896, both mentally and physically. His aphasia was somewhat lessened; connects sentences better; is more easily understood. He walks out daily on the Hospital grounds when the weather is favorable. Still he has great difficulty of speech—a retention of speech, or at least, utterance of words, with more or less error; seems to understand what he wants to say, and quickly catches the word or name when suggested to him. He can write some with left hand, when words are suggested to him—right hand too much paralyzed. This he has acquired since injury. When annoyed for words, his *recurring utterances* are curious; his usual expression, when annoyed for want of a name for a person or thing, being "*Buddie, Buddie.*"

There is no *word deafness* or *word blindness* distinctly manifested in his case, though much confusion and formal disorder of speech exists, which seems to be not so much from loss of memory for words as an inability to express them, and the case has been diagnosed as one of "motor aphasia;" the lesion or disease supposed to be in the left third frontal convolution and adjacent structures.

Dr. Henry M. Hurd, Superintendent of Johns-Hopkins Hospital, saw this case in January, 1897, and suggested trephining as a tentative measure, but thought the operation not apt to do much good, as the symptoms indicated destruction of the brain tissue (from his spastic condition or possibly structural contracture of muscles of right arm, etc).

Interesting inquiries in this case are: 1st, How far this trouble may be due to the injury, with the probable depression of bone accompanying? And 2d, How much is due to the syphilitic trouble?

Coming on so soon after the injury to the head, points strongly to the former view, but other features of the case, with the slight improvement resulting from specific treatment (if it be not from compensatory action of right hemisphere), point to the latter view.

Another interesting enquiry is, Will the compensatory action of the right hemisphere continue? If so, how far and how long?

The trephining has been delayed only on account of lack of co-operation on part of friends, but is still under consideration.

Absent Organ.

A Jewish medical student, being examined in pathological anatomy, was asked to name the organs of the body in which cysts are most often found. In his enumeration, the ovary was omitted, whereupon the Examiner, to jog his memory, said "Think of an organ you do not possess." "Oh, the prepuce!" was the prompt response.

SURGICAL TREATMENT OF SUPPURATIVE PERICARDITIS.*

By J. McFADDEN GASTON, M. D., Atlanta, Ga.

Professor Surgery, Southern Medical College, etc.

The proposition that pericardial effusions should be treated in the same manner as pleural effusions implies that an energetic medicinal treatment should be resorted to preliminary to any kind of surgical interference. The trend of clinical observation upon the relative advantages in serous collections of the pleural cavity by medication and aspiration is favorable to the former, especially in view of the tendency of a repetition of the latter to develope pus. The discussion which has been progressing latterly among those most familiar with serous and purulent collections in the thorax inclines to more vigorous measures of internal treatment before using any means of mechanical evacuation. The reasons for this are even more urgent in pericardial effusions than in pleural effusions.

I have stated elsewhere that the exact stage at which these affections pass from the domain of medicine to that of surgery is not well defined, and there seems to be a tendency of late to revive the active use of medication, rather than resort to strictly surgical measures. It is evident that surgical pathology embraces cases requiring the use of medication, as well as operative interference, and such medicinal means of relief come under the category of surgical resources in like manner as instrumental appliances. If the distinction is established upon the basis of functional and organic changes, recognizing the former as limiting the sphere of the physician, and the latter that of the surgeon, no question need be raised as to the mode of treatment. It is demonstrated by clinical observation, that diseased structures are more tolerant of surgical interference than when in their normal condition, and the pericardium, in this respect, is like other parts of the physical organization.

Under the second heading of the paper, it is set forth that suppurative pericarditis is rarely curable by paracentesis, thus keeping up the analogy with pleuritic accumulations. It may, therefore, be considered that aspiration is not applicable to purulent collections in the pericardium, and should be limited to serous effusions.

This brings us to the third division, setting forth that incision and drainage should be instituted as soon as the diagnosis is made. This operation is said to have been practiced as early as 1801 by Romero; and Gussenbauer has successfully evacuated pus from the pericardium after exposing the part by the resection of five ribs.—(Ashhurst's *Surgery.*)

The essayist suggests that resection of the costal cartilages may be indicated to obtain access to the distended pericardium without injury to the pleura; but it would be unnecessary that resection be performed when a division at the sternal attachment would allow the cartilages to be raised so as to expose the field of operation.

Paracentesis Pericardii.—Under this heading the *Supplement of the International Encyclopedia of Surgery* reports that West chronicled among seventy-nine cases of purulent pericarditis one in which the trocar had pierced the right ventricle—causing death. "The immediate result of the operation in nearly every case was good, even if but a small quantity of fluid was removed, the mechanical interference with the heart's action being obviated by relief from pressure."

The operation has been done in the fifth intercostal space one inch to the left of the sternum, and the aspirator was preferred for serous effusion, while a free incision is advised for purulent pericarditis. "The quantity removed may be very great," says Richard H. Hart in the article above referred to, "and in Dr. West's successful case as much as two quarts were removed without any bad symptoms, or even faintness, but, on the contrary, with immediate relief."

The Annual of Universal Medical Sciences, which has had my contributions on "Thoracic Surgery" for some years—1890, 1891, 1893, 1894, 1895, 1896, 1897—will be relied on for data, which will be culled without more than giving credit to authors in these years, and to the compiler in years previously.

A. L. Loomis and Chas. E. Quinby, of New York, edited the article on diseases of the heart —Ibid, Vol. I, 1889. They give Foureur's case of primary purulent pericarditis, in which bacteria were abundant in the pus, but absent from the blood. The coccus was the common one of suppuration (streptococcus pyogenes), and inoculations of cultures caused abscesses in various parts of the animal, but not pericarditis. "Probably," they say, "injury of the pericardium would have again localized the poison upon that surface. An interesting feature of this case was that no other points of suppuration could be found, and that the

* Read before the American Surgical Association, at Washington, D. C., May 5th, 1897, in discussion of a paper on the same subject by Dr. John B. Roberts.

blood was free from the cocci." In the same article, Doubleday's fifty-six cases, treated by aspiration, at the New York Hospital; Musser's case, mistaken for pleuritis; and J. K. Love's case of pneumo-hydropericardium; and Hasebroek's case of chylopericardium, are all mentioned.

In 1890 *Annual*—Ferrier recommends surgical interference:

1. When the exudation is dangerous, owing to its abundance; in case pleural effusion also exists, the latter should be first evacuated.

2. When, if small in amount, it shows no tendency to subside, and from its chronic course exposes the heart to fatty degeneration.

3. When the effusion is purulent and might give rise to septic conditions. The statistics are better in proportion in the four cases treated by incision and free drainage.

In 1891, we have no cases reported.

In 1892 *Annual*—Handford relates a case in which eleven ounces of coffee-colored fluid were removed by aspiration from the pericardium, with relief, followed by death. Shattuck, R. F. Beckam, S. S. Stoll, Davidson, Herman Bronner, and W. G. Scott, also record relief, and, generally, permanent recoveries from the same operation or incision.

In 1893, we have Koerti's operation. Puncture was made in the fifth intercostal space. After resection of about two inches of the fifth rib, the pericardium was opened, and about a litre (quart) of thin, purulent, heavy, smelling fluid was evacuated. On enlargement of the opening to the left, the cardiac movements could be plainly seen and the heart kept on acting steadily, showing distinctly the three separate movements. Operation occurred on December 8th, 1891, and death on December 12th.

T. Churton, of Leeds, reported a case of hæmorrhagic pericarditis, with serous effusion in right pleura, in which he performed aspiration of the pericardium thirteen times and paracentesis of the pleura seven times. The patient lived over a year.

In 1894 *Annual*—Wilson, of Nashville, Tenn., has practiced, as he supposes, for the second time, paracentesis of the pericardium, through the fifth *right* intercostal space. An ordinary aspirating needle was used twice with immediate relief of the severe symptoms.

The cases of West, referred to already, were culled in 1893. Thirty-six of the cases recovered. These recoveries confirm the belief that the *best point of puncture is the fifth intercostal space*, an inch from the left border of sternum. R. Siewers, of Helsingfors, is equally positive in his preference for this position, as he had four recoveries out of nine cases punctured in the region to the left of the sternum, but he considered the distance from it to be two centimetres. He used drainage but no irrigation in his successful cases.

In 1895 *Annual*—Only one case, paracentesis pericardii.

Gould's *Year-Book for* 1897 contains the following: Delorme and Mignon (*Boston Medical and Surgical Journal*, March 12, 1896,) have devised a method for puncture and incision of the pericardium which they think far safer than that formerly employed. The operation for puncturing the pericardial sac is as follows: A very small skin-cut is made in the fifth left interspace close to the sternal margin, and an aspirating needle is introduced closely against the bone. The needle is kept first by the sternal edge, and then by the posterior surface of the sternum for a centimetre, and is then pushed directly downward and a little backward, to a depth of several centimetres, until liquid appears in the aspirator. To practice incision of the pericardium, the surgeon finds the edge of the left pleura and pushes it outward. Two centimetres of the fifth and sixth cartilages are excised by means of gouge forceps, commencing at the edge of the sternum. The intercostal vessels of these spaces, and the triangularis sterni, are then pushed away with the fingers. The pericardium is distinctly visible at the bottom of the wound, being of a pearly white color.

The favorable results of incision and drainage for suppurative pericarditis encourages a resort to this operative measure whenever the case has passed from the serous to the purulent stage. It is evident that pus is a secondary phase of the inflammatory process in the tissues of the pericardium which previously yields serum, and there is rarely if ever a collection of pus without a previous serous effusion, as in pleuritis.

The only means available for testing the character of the contents of the pericardium is the aspirator or the hypodermic syringe; and if serum is found, of course it should be evacuated, and medication with such agents as have been found most efficacious in serous pleural effusions. But if a purulent collection is already present, the case requires a resort to incision and drainage without any delay. Medication may be combined with favorable hygienic surroundings at the same time that an operation is undertaken, and there is every encouragement to expect good results from alteratives and tonics in these cases.

ABSCESSES OF BOTH KIDNEYS DUE TO CHRONIC CYSTITIS.

Abscesses Opened and Drainage Kept Up. Steady Improvement.*

By JACOB MICHAUX, M. D., Richmond, Va.,

Professor of Obstetrics, University College of Medicine, Richmond, Va., etc.

I desire to report a case of chronic cystitis, of five or six years' standing, resulting in abscess of the kidney, and the surgical measures resorted to for relief.

Miss C. F., white, æt. 22, was brought to me in January, 1897. She was found to be suffering with chronic cystitis, which had been present, according to her statement and that of her aunt, for five or six years. I advised operative treatment, but could not then induce her to submit. I put her upon medical treatment, and advised rest. After the lapse of a month of fruitless effort, she consented to go to the Retreat for the Sick of this city for operation.

Accordingly, on the 18th February, 1897, I dilated the urethra under ether and cauterized the internal surface of the bladder. She was then put to bed, and the bladder washed out daily with a solution of teaspoonful of boric acid to a pint tepid water. The urine drained away well, and the temperature and general condition improved fairly well for about three weeks.

About 15th March, the temperature again began to climb until the 24th of March, when it reached 104° F.

For some days my attention had been attracted to the peculiar character and location of the pain, which did not seem to come, as I at first supposed, from the bladder, but was referred to the left side radiating outward and upward *through* the *left* inguinal region and over the crest of the ilium to the region of the kidney. The post-renal region was not enlarged, but was very tender. The bladder symptoms were at this period in abeyance, and yet we had fever and pus in the urine in large (visible) quantities. I, therefore, reasoned that it came from the kidney. In order to confirm the diagnosis, I sent a vial of the urine to Dr. Moses D. Hoge, Jr., Professor of Urinology and Pathology in the University College of Medicine, who, upon a careful and most complete analysis, reported renal cells among the debris.

"Upon this hint I spake," and operated the following day (March 25th, 1897)

After exposing the whole posterior surface of the kidney, I saw that the entire organ was enlarged and inflamed. The pelvis of the kidney did not (as I expected it would) show any signs of distension and inflammation.

Dr. J. W. Henson, Professor of Anatomy in the University College of Medicine, who assisted me, called my attention, at this juncture, to a peculiar yellowish spot near the convex border not far from the middle of the organ. On palpation, this was found to be the thin wall of a large abscess wholly within the organ. This was incised, and my index finger was carried down to the pelvis of the kidney, and found an abscess cavity about an inch and a half wide, extending the whole width of the organ, and at that point almost dividing the kidney into two parts, the capsule being about the only tissue that held the separated portions together. I was tempted to remove the whole kidney—so unpromising was the condition presented; but concluded to try to save whatever sound tissue might remain by inserting a rubber drainage tube into the kidney abscess, and dressing the wound by the open method. I put two stitches in the posterior end of the long incision and packed the rest with gauze around the tube. Drs. Wm. T. and St. J. Oppenhimer, J. A. Hodges, J. W. Henson, Wm. R. Jones, J. M. Winfree, also Drs. Porter and Greiner, house physicians in the Retreat, kindly assisted me.

The temperature at once fell to normal, and, with trifling variations, remained there. The general condition improved, and there was strong reason to hope for a good recovery.

About the 1st of April, however, I was disappointed to find more temperature and bladder symptoms looming up. I combatted these as best I could by drug treatment and lavage, but without success, till April 15th, when I opened the bladder between the mouths of the ureters, and inserted a glass drainage tube about five-eighths inch in diameter. This was followed by a great improvement in temperature and general condition, and greatly facilitated washing out and drainage of the viscus. I soon began to take her out of bed and make her sit in a rocker and take a few steps. [The condition of the kidneys continued to improve, save on one occasion, when I removed the tube, about two weeks after the operation upon it. Finding the temperature going up, I reinserted it, and it still remains, draining limpid urine and only small amounts of pus.] The bladder is now (May 12th) giving her more trouble than the kidney, and I fear that its walls, so long inflamed, may not be able to take on reparative action.

* Reported in part to Richmond Academy of Medicine and Surgery, May 11th, 1897, and Notes up to May 25th, added.

I shall now try continuous irrigation for three or four hours night and morning.

Just after the above report, I found that although the tube from left kidney was draining well, the one from the bladder was dry, and that there was *pain* and *tenderness* in the *right* inguinal and lumbar regions, clearly showing stoppage of the right ureter. I therefore, on the 14th May (1897)—thirty hours after these symptoms first appeared—operated under ether upon the right kidney in order to relieve the choked ureter.

The incision was made just below (three-fourths of an inch) the lower border of the last rib. The kidney was exposed, and the pelvis and upper end of the ureter were brought into view. An incision was made at the junction of the ureter and pelvis, and the urine issued forth in a strong jet some six inches above the body of the patient. The quantity of the urine that escaped was considerable, and some clots and a little pus escaped. The depression and nausea following this operation were extreme, and I almost despaired of her life; but she rallied finally and is now improving, though still weak. The drainage from both kidneys still continues through the rubber drainage-tubes in the incisions in the back, and there is some urine from the glass drainage tubes in the base of the bladder.

I shall keep the kidneys and bladder well-drained and washed out, with the hope that healing may ultimately take place, and that then the three fistulæ, which I have made, as above described, may be closed. She is free from pain now, for the first time in many months, and is slowly gaining strength, but I fear for her yet.

323 *East Franklin Street.*

HÆMATIDROSIS (Blood Sweating).

By GEORGE S. WALKER, M. D., Staunton, Va.,

Assistant Physician to Western State (Virginia) Hospital, etc.

I wish to present the history of a case of hæmatidrosis, or sweating of blood, in the person of a female patient under my care in the Western State Hospital, Staunton, Va. It is interesting, I think, both from a psychological as well as a medical standpoint, and interesting not only to hospital men but also to the general practitioner, both on account of its peculiarity as well as its rare occurrence.

It is a case of vicarious hemorrhage and hæmatidrosis, or vicarious menstruation, in a girl of nineteen years of age, admitted into this Hospital August 15, 1895, as insane, but she is really more of a congenital imbecile.

When eight years old the patient is said to have had "spasms," but has had none since she has been in the hospital. She has not been regular in her menstruation for some time, but at the time when her monthly period should appear, she has for years suffered with these anomalous hemorrhages. Anomalies of the sweat secretion are quite frequent and usually combined with vaso-motor disturbances in certain general neuroses, like hysteria and neurasthenia; but cases of general hæmatidrosis (bloody sweat) are exceedingly rare—something you hear of but seldom see. I have found very little literature on the subject. The patient under consideration is not only a case of hæmatidrosis, but the anomaly also manifests itself in various parts as vicarious hemorrhage.

She said that before she came to this institution she actually sweat blood, but her statement was looked upon as a delusion by our medical faculty, but her truthfulness was demonstrated by future events. She looks healthy and her physical condition is very good, but she is neurotic, hysterical, timid and congenitally weak minded.

After her admission to this Hospital, nothing abnormal happened until the 25th of September, 1895—the time for her catamenia—when she began to complain of her right breast. It became very much swollen and sensitive, and in twenty-four hours serum began to escape from the nipple and areolar, space around it—after awhile becoming tinged with blood, and finally pure blood escaped. The blood would ooze from the surface just like drops of sweat. The hæmatidrosis has never been general—that is, it has never occurred over the whole body or even one-half of the body, but has occurred as above stated, and also has shown itself in the palm of her hand and in other portions of her body. It has always been unilateral, and always on the right side. Up to this time, her menstruation had been suppressed for months, but her physical health improved, and as the result of the administration of emmenagogues she menstruated, having sufficient flow, and without any complication.

At a subsequent period she was suffering with her breast, and on account of the delay of the flow was given an emmenagogue, which was followed by a severe hemorrhage from the bowels. Sometimes she would bleed at the nose, gums, eyes, navel, and from the palm of the hand. Again she would have hæmoptysis; another time hæmatamesis, again hæmaturia.

I will not pretend to give a positive etiology of the case, as it is a mystery, but will venture an opinion in regard to it. We know the etiology of this affection is as obscure as it is rare.

Hyperidrosis, or increase of the secretion of sweat, occurs in easily excitable persons in consequence of nervous irritation, *e. g.*, as the sweating which occurs in debilitated conditions and in the hysterical and epileptoid sweats. Sometimes the increase is confined to one side. This condition is often accompanied with other nervous phenomena—partly with the symptoms of paralysis of the cervical-sympathetic, and partly with the symptoms of stimulation of the sympathetic nerves. It may occur without these phenomena, and is due probably to the stimulation of the proper secretory fibres alone, *e. g.*, in the sweating during their course, and at the crises of fevers, and in the sweating of phthisis.

The sweating of blood is exceedingly rare. According to Hebra, in some cases this condition represents a vicarious form of menstruation, and is usually one of many phenomena of nervous affections. Neurosis is a generic term for conditions of hyperæsthesia or disturbance of the nervous system which simulate disease in an organ that is healthly or without evident lesion of any of its parts, and they may be general or local, and many cases recorded illustrate the fact that peripheral irritation is a very decided factor in their production. Hence we are to infer that in such cases the origin is due to some central neurosis, which, instead of producing hyperidrosis occurring at the menstrual period, so affects the blood vessels of the sweat glands as to allow the red blood corpuscles to escape.

BROMOFORM IN WHOOPING-COUGH.

By M. D. HOGE, Jr., M. D., Richmond, Va.,

Professor Pathology and Urinology, University College of Medicine, Richmond, Va.; Pathologist to the Virginia Hospital; Attending Physician to the Foundling Hospital, etc.

Last fall, during one of the meetings of the Richmond Academy of Medicine and Surgery, the question of the treatment of whooping-cough was brought up, and among the number of remedies mentioned was bromoform. Soon after this discussion, the disease in question was brought by some visitor to the Foundling Hospital of this city, and seven of the infants, ranging in ages from six weeks to two years and seven months, were attacked. I at once determined to give bromoform a fair trial and report the results.

I am much indebted to the Matron, Miss Pollard, for the complete record of the cases.

G. H., female, aged two years and seven months, was begun on three drops every four hours, increased one drop each day, till fifteen drops were reached, making sixty drops daily. It seemed to have very little effect on the child or the disease in any manner. Duration of the disease, nine weeks.

F. H., female, aged one year and six months, was given at first two drops every four hours, which was increased one drop per day till ten were reached. This child did not vomit or choke up till the fourth week, which condition lasted till the seventh week. She was overcome by the bromoform twice, but both times not till two hours after taking the ten drops. The first time she slept for twelve hours, but could be easily aroused by shaking. Disease lasted eleven weeks.

B. W., female, aged one year and six months, was given finally eight drops every four hours. She was overcome twice—both times when the bromoform was given on an empty stomach. She staggered and rolled about very much like an intoxicated person. She vomited constantly during the whole course of the disease, which was severe, and lasted eleven weeks.

C. P., female, aged two months, was given one to three drops every four or six hours. Vomited very little; whooped a great deal. Duration of disease, nine weeks.

R. B., female, aged seven months, was given one to three drops every four to six hours. This was a very mild case of whooping-cough, which lasted five weeks.

H. M., male, aged six weeks, was given two drops three times daily. He was made somewhat stupid; vomited and whooped a great deal, but the duration of the disease was eleven weeks.

L. M., female, aged three months, was given two drops of bromoform every four hours. She vomited a great deal. Duration of disease, ten weeks.

The average time that each of the seven infants was affected was eight and a half weeks.

Bromoform is a colorless, heavy liquid, having an odor and taste similar to chloroform; its specific gravity is 2.904; the formula is C. H. Br_3—a tribromo-menthane. My object in administering it was to test its *therapeutic value* and establish its *dosage*

As to the first, my conclusion is, that it had absolutely no good effect in lessening the paroxysms or cutting short the disease.

Regarding the second point, it should never be given on an empty stomach, and not at all

to children under two months of age; for a child one year old, six drops four times daily is safe.

7 *N. Third Street.*

SOME OVERLOOKED POINTS IN LIVER TROUBLES *

By JACOB MICHAUX, M. D., Richmond, Va.

Professor of Obstetrics, University College of Medicine, Richmond, etc.

The above caption opens far too wide a subject to be dealt with exhaustively, except in a systematic treatise; hence no attempt will be made to cover the whole field. My object is to give my personal experience and observations improved by all the extraneous sources I could command in the short time at my disposal.

First, I desire to direct your attention to the confusion that exists regarding the two widely different and entirely distinct conditions known as *jaundice* and *biliousness.* A proper conception of the difference between these conditions is most important, because of the *radically different treatment* required for them. Furthermore, it is important on account of the aid to diagnosis of a just appreciation of the two conditions.

The occurrence of jaundice is, as a rule, only possible when the *common* duct is obstructed and the *secreted bile is reabsorbed.* [There are one or two exceptions, viz.: A rare form of blood dyscrasia and yellow fever.] Thus it appears that jaundice is the result of the absorption of bile; whilst biliousness is the *muddy, dirty, discoloration* resulting from the non-elimination of the elements which constitute the bile. Chemistry proves that color depends upon the arrangement of atoms; hence it is easily seen that the characteristic color of the bile could not be found in the tissues before the bile is elaborated from the crude materials in the blood. Observation and experience have shown this view to be correct. *Biliousness,* therefore, is only the result of functional derangement of the liver; whilst *jaundice* is the result of obstruction of common duct (from any of several causes, such as catarrh, tumor, parasite, or gall-stone, etc.) In the latter condition the liver is often perfectly normal; but is unable to deliver its secretion to the intestine.

It is readily seen from the foregoing statements that the treatment of the two conditions must be radically different. It is manifestly bad therapy to stimulate the liver in jaundice, for the reason that the organ is not at fault and an increase of the secretions would endanger the integrity of the tubes and increase the pain and pressure. Better far to give belladonna in full doses to dilate the tube by its action on unstriped muscular fibre and soda bicarbonate to render the bile more fluid, thus to facilitate its outflow; the salines to deplete and relieve pressure.

In the case of biliousness we simply stimulate the functions of the liver, and for this we have many efficient remedies. Among these are some of great value too little used, viz.: ipecac and euonymus. These in combination with calomel, I think, are the best. I am aware of the mooted question with regard to the action of calomel; but I must confess that my faith in it as a cholagogue remains unshaken.

323 *East Franklin Street.*

* Read before Richmond Academy of Medicine and Surgery, May 25, 1897.

Correspondence.

"Typho-Malarial Fever—What is it?"

Mr. Editor,—This was the subject of a paper read by Dr. Wm. S. Gordon before the Medical Society of Virginia at its last meeting at Rockbridge Alum Springs, and elicited such discussion as to show it to be of rather unusual interest. This paper I have read with so much relish that, whilst conscious of my inability to handle the subject, nevertheless, with deference to the gentlemen with whom I may disagree in these remarks, will, with your permission, take my say through the *Virginia Medical Semi-Monthly,* the foster-father of the Virginia Medical Society.

In the first place, before we can give a proper judgment as to any "mixture," we must know its constituents. Let us ask, then, What is typhoid fever? How does it get its name? We make it a comparative fever with typhus as its superlative—a typhus mitior. This would make it a "mixture," and compel us to admit the typhus germ to be entitled to some credit for the name we give it. If the typhus germ is not in evidence in the system at the same time that the typhoid germ is there, how can we claim kinship? If the relationship cannot be traced because of the absence of the typhus germ, then it is illegitimate and improper, and thus a misnomer.

All students know the differentiation of the two diseases (typhus and typhoid). If, then, there is a differentiation, there is a difference, and this difference on the germ theory would

not allow any more of a mixture in this than in the so-called typho-malarial.

Our conclusion is, then, that there is no such disease as typhoid fever (properly so-called) any more than there is such an one as typho-malarial fever.

It is not necessary here to go into the differentiation of the two diseases (typhus and typhoid) nor to speak of their similarity. We can simply say the likeness consists dynamically more than any other way, and that the head symptoms of the two probably go a long way towards the claim of relationship.

Now, if there is no such disease as typhoid fever, there can be no typho-malarial (in name). What, then, is the proper name of this fever? I answer, *infectious enteric fever.* Granted that it is more properly named enteric fever, can we have a mixture called entero-miasmatic or malarial?

This, all will admit, is not only a puzzling point to us of this generation, but also it was to generations back. Can two diseases develop in the system at the same time, when we know that no two pieces of matter can occupy the same space at the same time? If we drive a nail in a piece of wood, it drives out the wood for the space it occupies. To undertake an essay in this regard is not my object, were I competent to do so.

When we look out into the world, we find a great many inconsistencies to us; still we know they harmonize. For us to base our premises upon the supposition that certain diseases have their respective germs for argumentative purposes of rational treatment, etc., or, as far as we want them to go, then discard them to argue other points, would be inconsistent; so we will have to stick to our germ principle and theory all the way through or discard it altogether to be consistent.

We know that man is one creation and that the monkey is another. They are parallel lines (like our germs) and running accordingly, but do they meet? If these lines should meet, it is plain to see we would have a chaotic mass.

> "Oh vital spirit of nature, thou alone
> Giveth a perdurable garment to this earth,
> And thou sitt'st momently smiling at the birth
> Of myriad forms of life that thou hast known
> Before the first day broke!"

Do we not know the value of checks and balances? How could we live a moment without them? Would not our planet rush with headlong speed to mingle with larger bodies? And yet they are of reciprocal relationship or this harmony would not be brought about by inconsistencies.

Our enteric fever has for its cause a germ from animal life, while our malarial fever has for its cause a parasitic molecule of vegetable life. These germs are different, and run along parallel lines to the end for harmony. If we are perfectly satisfied that these diseases have for their causation such germs as we describe, then we know that they are just as different as diseases as are the sun, moon and stars from each other in certain particulars, and yet they harmonize.

Don't be deceived by this word harmony in the wrong sense. Before we let it lead us out of our path, we will go back to the ultimates C. H. O. N. and get our bearings afresh, where there is circumscription, yet their creatives are illimitable, and we must not lose ourselves amidst this illimitability. There is no need of it. We have only two material molecules to deal with here—one animal, the other vegetable—and the query is: Do they mix? Well, yes. Does not the grass of the field help to make our flesh? Here is a mixture, and to my mind just about such an one as we have in what we term typho-malarial fever, or what might be more properly termed entero-malarial.

Our attention being every day called to the latency of powers and forces, we cannot deny it with reason. How does pus originate in a closed joint?

Our minds at this day are not oblivious to the fact of auto infection where there are latencies that might forever sleep but for the necessary stimuli.

Let us go for parallelism, as example, from matter to mind, and note the latent military genius of General Grant, which awaited the necessary stimulus for action. Again, let us look at our beloved hero of the South, General Lee, and note the dormant powers of intellectuality, of statesmanship, of philanthropy, which were allowed to sleep and die, in a great measure, for want of necessary opportunity to give them proper scope for action.

We must agree that germs of malaria, and of infectious enteritis or typhoid fever, may either one or both be latent for a time in the system, when one or the other may be called into action by the necessary environments and stimuli, and that they are *modified* in accordance, though they may not mix as we ordinarily speak of a mixture—that is to say, incorporate intimately so as to deserve the mixed name.

It is noticeable that our language is prone to misnomers—that is, names having no significance as to origin. Quite different from the ancients, and even the inhabitants of this country when we came here. Many examples

could be given. We ought not to have it to say that there is "nothing in a name," whilst "a rose would smell as sweet by any other name"; it would be a shame to call it a skunk-cabbage. This name, typho-malarial fever, is simply a misnomer, as is typhoid fever—I have heard the older heads say, such as Robley Dunglison, and others. But we have with common consent agreed to these names, right or wrong. Nevertheless, that does not make them true to etymology.

If I am not mistaken, the name "atypical forms" was first given (with us) by our lamented fellow-member, Dr. Wm. C. Dabney. The term "atypical," in certain variations of disease, is an appropriate one and is unmistakable.

The behavior of quinine, too, all of us have virtually agreed (more or less) to make a test of malaria in doubtful typhoid fever cases. This appears to me to be proper if we will not forget that there are cases of symptomatic malarial fever—continued fever—with no connection whatever with typhoid fever, that will "turn the point" of our "probe quinine" with as much disgust as the "music-sick" girl turned from her music lessons, or as typhoid fever could possibly do.

I have written this hastily, but according to the "faith that's in me," and give it simply as my individual opinion, arrived at after long years of clinical observation.

Wm. S. Stoakley, M. D.

Millboro Springs, Va., April 24th, 1897.

Proceedings of Societies, etc.

RICHMOND ACADEMY OF MEDICINE AND SURGERY.

Dr. Mark W. Peyser, Secretary and Reporter.

Regular Meeting Held May 26, 1897.

Dr. J. N. Upshur, President, in the chair.

Dr. Jacob Michaux read a paper on

Some Overlooked Points in Liver Troubles. [See page 104.]

DISCUSSION.

Dr. Landon B. Edwards said there had long been a recognized difference between jaundice and biliousness. Jaundice rarely produces material headache and is not often connected with diseases of the liver itself. In short, jaundice is a sign or symptom of obstruction of the bile-ducts—whether due to catarrh of the duodenum or to the pressure of tumors or distended organs upon the bile-ducts. In other words, "*yellow* jaundice," as people usually style it, recognizes that bile has been formed, but some obstruction along the course of the ducts prevents its excretion into the alimentary canal. The formed bile is dammed back first into the liver cells and then into the general circulation; in short, it is absorbed into the system. Circulating in the blood, it stains every tissue of the body and seeks elimination by the kidneys, causing what is known as mahogany urine. *Hæmatogenous* jaundice, on the other hand, refers to the retention in the blood of materials which were intended to make up the bile. In other words, it is "embryonic" bile—if such a term may be allowed—in the blood; it is not formed bile. The appearance of this hæmatogenous jaundice reminds one of that muddy, sallow color recognized as a malarial complexion or even as a cancerous cachexia, rather than of the pumpkin yellow jaundice.

As to biliousness—we all recognize its occurrence, but do not understand its pathology. It is often recognized as a bilious sick headache. Sometimes it is marked by bilious vomiting; at other times it is constipation, and sometimes there may be the absence of the usual marks of bile in the bowel discharges, but there is not the pumpkin yellow jaundice. The appearance partakes rather of the nature of hæmatogenous than hepatogenous jaundice. Apparently biliousness is due to inactive liver-cell action, but the condition is not understood. *As to treatment of jaundice*, due simply to catarrh of the duodenum or bile-ducts, experience had taught him the value of calomel and soda. He has no theory to offer in explanation of the action, for when one undertakes to reason out the *modus operandi*, he is confronted with questions which he cannot answer. He simply knows it does good. This treatment is also useful in biliousness. Non emetic or diaphoretic doses of ipecac are valuable adjuvants. Nitro-glycerin and nitrite of amyl also help. In chronic conditions, phosphate of soda is beneficial. Where there appears to be impaction of the common or hepatic ducts by bile or gall-stones, he thinks he has seen beneficial results from copious draughts of olive oil. Some of the younger generation of therapeutists ridicule the supposed action of olive oil because they cannot explain it. Perhaps some of the copious draughts of oil finds its way along the walls of the common duct and even around the obstructing gall-stone, thus lubricating the channel for its extrusion. If the stone should be too large to be moved by natural processes,

then the surgeon will have to be called to the help of the physician.

Dr. J. S. Wellford was interested in the jaundice of the new-born. The child, when born, was red, and went gradually to white, but jaundice nearly always was present. He recognized the fact that it was somewhat due to the fœtal anatomy of the liver, which before birth discharged some of the functions of the liver, and he was also aware of the condition, jaundice neonatorum, but he was somewhat at a loss in some cases.

A child born at the eighth month of uterine life was badly developed, weighing two or three pounds, and had an apparent absence of the fontanelles, which, however, developed in two or three days.

If there was no discoloration of the conjunctiva, he regarded the condition as normal catarrh, but, in this instance, the jaundice persisted for nearly a month.

Some years ago, he had an attack of acute jaundice, well-marked and painful. It was treated most actively with saline aperients, till he had six operations daily, and he noticed that, after each operation, the skin assumed a lighter hue.

The question of biliousness can be satisfactorily explained in a number of instances: the liver was not performing its functions; *e. g.*, making bile, and the ptomaines, instead of being eliminated, were absorbed, producing certain symptoms, among them a muddy, but not jaundiced, condition of the skin. It was a lack of elimination, seen whenever the liver was involved. In malarial regions, there are always liver complications, producing the muddy complexion, etc.; and most cases of biliousness results from debauching, over-feeding, etc., and were generally relieved by saline aperients made alkaline.

Dr. Jacob Michaux, in closing the discussion, said his attention had been directed to the subject because of the confusion existing regarding terms and treatment, the former being distinctly important from both a diagnostic and therapeutic point of view. He approved everything brought out in the discussion, and reported the following case:

Woman, over 70 years of age, upon whom he operated for gall-stone about ten years ago, had pain and local indications of obstruction of the common duct, followed by jaundice, which became intense. The usual remedies were given, but without avail; the urine became of a mahogany color; stools were entirely devoid of bile, etc. She was taking very little food—not enough to sustain her, as milk and rice. An operation to relieve her was done, but, unfortunately, without result. The abdomen was opened and liver and gall-bladder exposed, but the endeavor to trace the duct was vain, because of the mass of inflammatory exudate which matted the omentum and intestines almost solidly, and he feared to use force. The gall-bladder was incised, and with a long, probe-pointed, flexible probe he thought he could follow up the tube and push out the stone, but could not. Then he endeavored to reach the duct through the intestine, and again failed. In the bladder was found a stone of considerable size. The edges of the gall-bladder were stitched to those of the abdominal wound, and two small drainage tubes of india rubber were inserted, and the abdominal wound closed. For several weeks the gall-bladder was washed out, but it was afterwards found unnecessary to do so, as the flow of bile through the drainage tubes was considerable, the amount reaching twelve ounces in twenty-four hours. As a result, the skin and urine cleared up, but the character of fæces remained unchanged and digestive disturbances continued.

Gaining consent for another operation, he performed one that, to his knowledge, had never been done before, and that had been merely suggested by reading Harley as to the establishment of a fistula. It was done in February, 1888. Openings were made in the gall-bladder and a knuckle of the duodenum, and the edges stitched together. The abdominal incision was closed. The patient died on the night following the operation, and he had no further opportunity for testing its efficiency.

A point of interest was the remarkable clearing of the skin and urine, which was absolute proof of the position taken with regard to the etiology of jaundice.

Regarding biliousness, it appeared to be due simply to non-elimination of the materials going to form the bile.

Respect Professional Opinion.

St. Thomas Hospital Gazette is responsible for this:—

New House Surgeon (to wife of an injured man he was examining): "I fear your poor husband is dead."

Supposed Corpse: "No, I ain't."

Anxious Wife: "Hush, John, be quiet; the gentleman must know better than you what's the matter with you."

Analyses, Selections, etc.

Late Lesions of Syphilis in the Extrinsic Muscular System.

Dr. J. Herbert Claiborne, New York, has a good paper on this subject (*New Albany Med. Her.*, May, 1897).

Among late lesions of syphilis, paralysis of the extrinsic muscular system plays an important and frequent rôle. Three nerves supply the extrinsic muscular system of the eye, viz., the third, fourth and sixth cranial nerves. The third nerve supplies the superior, internal, and inferior recti, and inferior oblique; it likewise supplies the sphincter of the pupil and muscle of accommodation. The fourth nerve supplies but one muscle, the superior oblique. The sixth nerve supplies the external rectus.

The clinical picture presented by paralysis of each of these nerves has its peculiar characteristics. For example, *paralysis af the third* nerve causes limitation of the movement of the eyeball in the direction of each one of the muscles named. The eyeball cannot be turned inward, upward, downward, and the upper lid will droop, since the third nerve likewise supplies the levator palpebræ superioris. The pupil is dilated, and, if the patient attempts to read, there is a paralysis of the muscle of accommodation. This condition is recognized as *ophthalmoplegia completa.* When only the external muscles, *i. e.*, all of the muscles of the third nerve except the muscle of the pupil and muscle of accommodation are paralyzed, the condition is known as *ophthalmoplegia.* And when only the sphincter pupilla and muscle of accommodation are paralyzed, it is called *ophthalmoplegia interna.*

Each of these two paralyses may appear separately, or may occur in combinations. The most prominent symptom from superficial observation is drooping of the uper lid; the other signs can be found by elevating the upper lid with the finger. At the same time that the eyeball is incapable of moving in the direction of the muscles supplied by the third nerve, the eye will be found turning outward, since it is committed to a downward and outward movement by the existence of the normal action of the external rectus and the superior oblique. This completes the picture of paralysis of the third nerve.

In *paralysis of the sixth nerve* there is limitation of the eyeball movements only in the direction of the action of the external rectus. The eyeball cannot turn outward, and, therefore, it is committed to an internal position by the action of the internal rectus, so that there is a distinct convergent strabismus present. This paralysis is very easy to diagnosticate when it exists in an exaggerated form.

In *paralysis of the superior oblique,* nothing peculiarly characteristic is to be observed by casual examination. The eyeball under ordinary circumstances in this paralysis has a normal appearance with reference to position. The diagnosis is made through the statements of the patient and by a careful and intricate examination. This careful and intricate examination consists in recognizing the form of diplopia which exists.

Suppose there is complete *paralysis of the extrinsic muscles supplied by the third nerve,* the eyeball is committed to an external position and movement. In other words, there is distinct divergence of the eye. Now, just at this point the law of projection must be remembered. As the eye is turned outward, the posterior pole of the eyes moves inward, and in that position an image falling upon the retina will fall to the outer side of the macula lutea, and hence will be projected toward the inner side, *i. e.*, toward the nose. The diplopia, therefore, in this paralysis is a crossed one, the false image sailing across the median place of the face and occupying the right side. Under ordinary circumstances, it would require considerable intelligence on the part of the patient to recognize the images crossed, but by a very simple manœuvre the pseudo image can be rendered so significant that even the stupidest person may readily recognize its position. Suppose, for example, one were to place a red glass in front of the paralytic eye. Since there is diplopia, the image belonging to that eye would necessarily appear red, while the image which belongs to the other eye would appear white or the natural color of the candle flame. In this examination we preferably use a candle flame to any other object. Therefore, if the red glass is over the left eye and the red image is to the right of the white image, the diplopia is a crossed one, and that, in conjunction with the appearance of the individual, will constitute the diagnosis beyond peradventure. As long as the candle is held in the plane with the eye the double images will be of equal height, will occupy the same horizontal plane, and there will be no inclination of one candle toward the other.

In *paralysis of the external rectus,* the eyeball is committed to the internal movement and position. Since this is the case, the posterior pole of the eye turns outward, and the im-

age of a candle in front of the face would, therefore, fall to the inner side of the macula lutea, and, consequently, would be projected to the outer side. So that, granted that the left external rectus be paralyzed, the left image would stand on the left side, and we could readily establish which image belonged to each eye by the use of the red glass, as in the first instance. Granting, then, that there be a paralysis of the left external rectus, and we hold the red glass in front of the left eye, the red candle flame would appear to the left and the white one to the right. This is *homonymous diplopia.* As in the case of paralysis of the third nerve, the images will be in the same horizontal plane. The situation of the image in this case, together with the appearance of the individual, will always establish the diagnosis.

Paralysis of the superior oblique is much more complicated. First, the superior oblique muscle arises from the optic foramen, runs forward along the inner wall of the orbit, hooks along the trochlea, and, changing its course suddenly, passes downward and backward, and is inserted into the superior and external quadrants of the eyeball. It acts, therefore, from its apparent origin at the trochlea, and the ultimate result which it produces upon the eyeball is to pull it downwards and outwards. In doing this it must necessarily rotate the upper half of the vertical meridian inwards. Now, then, let us consider that this muscle is paralyzed. Since its action is to pull the eyeball downwards and outwards, the eye itself must be committed by the opposing muscles to an upward and inward position; and since its action likewise is to rotate the upper half of the vertical meridian inwards, the upper half of the vertical meridian becomes rotated outwards.

Let us analyze more closely the three elements in this muscle. Owing to its action of pulling the eye outwards, its paralysis commits the eye to an inward position. The posterior pole of the eye, therefore, must turn outward, and an image falling on the retina falls to the inner side of the macula lutea, and hence is projected outward; so that the diplopia in this paralysis is homonymous, and that is the first fact to establish in making the diagnosis. Since the action of this muscle also is to pull the eyeball downward, this paralysis commits the eye to an upward position, and since in an upward position the macula lutea is thrown downward, the image of the candle falls above the macula, and so is projected down. This is the second fact that must be established. We have, therefore, established two facts: In paralysis of the superior oblique the images are homonymous, and the pseudo image is lower down than the normal image of the other eye. Now, what is the effect produced by an inclination of the vertical meridian outward, as occurs in paralysis of these muscles? The image falls obliquely upon the upper and outer quadrants of the retina, and hence the projected image is tilted toward the normal image. To sum the whole matter up, then, in paralysis of the superior oblique the images are homonymous; the image of the paralyzed eye is on a lower plane than the image of the sound eye, and the upper end of the candle is tilted toward the image of the sound eye. Granting that the left superior oblique is paralyzed, the left eye image will be on the left side, below and tilted toward the right side image.

Another curious fact characteristic of this paralysis is this: the pseudo image, which is below, appears to be nearer to the patient than the image of the sound eye. A satisfactory explanation to this phenomenon has not been given, but I am inclined to think that it is owing to the apparent greater nearness of the candle to the floor as seen by the sound eye, and it, therefore, gives the patient the impression of being nearer to his feet. This explanation, while not totally satisfactory, is quite as reasonable as the explanation that the sun looks larger when it is nearer the horizon than when at the zenith. The explanation given by physicists for this fact is the unconscious comparison of the sun with objects apparently nearer to it on the horizon than when at the zenith.

There is no other muscle in the eye, paralysis of which will produce homonymous diplopia, throw the pseudo image lower than the normal image, and tilt it toward the normal image; so that if these three signs are observed a diagnosis of paralysis of the superior oblique may be made with positive certainty.

As to *paralysis of the inferior oblique*, it is not by any means certain that any one has ever reported a thoroughly authentic case of this kind. For my part, I have never seen it.

Paralysis of one of these three muscles unquestionably occurs as a lesion of tertiary syphilis, although I have seen paralysis of these three muscles in individuals in whom the existence of tertiary syphilis was absolutely excluded. In the last four months I have seen four cases of paralysis of the superior oblique muscle—one in a student of nineteen or twenty—in whom syphilis was absolutely precluded. The other three cases occurred in men who were from forty-two to sixty years of age,

two of whom admitted syphilis and the other was not questioned.

Paralysis of the third and sixth nerve is so very characteristic that I shall say no more about it except that the patient complains of seeing double on the street, and has much trouble in telling the false from the true image. A man who has homonymous diplopia can usually evade the two vehicles, for example, which appear to him, by taking a middle course; but the man of moderate intelligence who soon comes to know that his right image is on the left side and his left image on the right side, finds himself in a most perplexing quandary. Both of these men are apt to exclude one eye with the hand or bandage when going about. Such, however, is not always the case in paralysis of the superior oblique. One of the most prominent symptoms that these patients complain of is the difficulty which they have in going down stairs, in reading, or in looking at any object which is in the lower half of the field of vision. This complaint is universal. They will tell you that as long as they hold a book up they can read with perfect ease, but the moment they hold it down they see one line above the other. It is easy to see how very perplexing a vertical diplopia must be. Such patients are apt to have an unsteady and trembling gait in walking. They likewise are not able to tell the exact position of objects that are below, and in walking step too high or strike some obstruction. A candle should be used as the test object, and the red glass should be placed over one of the eyes.

Inasmuch as these paralyses are the result of tertiary syphilis, it follows that the exhibition of the iodide of potash is indicated. Let the iodide be pushed until at least as much as from fifty to eighty grains three times a day are taken, unless the symptoms commence to disappear before that point is reached. After the paralysis has disappeared the mixed treatment with compound tincture of gentian had best be followed. The length of time this treatment is continued would depend upon the different elements in the case. Electricity is not of service in the paralyses which are dependent upon tertiary syphilis. A very simple measure for the comfort of the patient is a pair of reversible glasses, one side of which contains a rough-ground window glass, the other a plain, non-refracting glass. Since the glasses are reversible, either eye may be used for seeing; and as long as one eye is obscured, the projection of the unobscured eye is true. This is far better than covering the eye with a green shade or bandage.

To sum up the facts related, paralyses of the extrinsic muscles of the eye, may be divided into three groups:

1. *Paralysis of the third nerve*, which may be (*a*) ophthalmoplegia completa, *i. e.*, paralysis of all the external muscles that are supplied by the third nerve and the sphincter of accommodation and pupil; (*b*) ophthalmoplegia interna, or paralysis of the sphincter pupilla and accommodation alone; (*c*) ophthalmoplegia externa, *i. e.*, paralysis of the extrinsic muscles of this nerve.
2. Paralysis of the sixth nerve.
3. Paralysis of the superior oblique.

Renal Disease in Relation to Surgical Operation.

In a good paper by Dr. Albert H. Tuttle, of Cambridge, Mass., on this subject (*Times and Reg.*, April 17, 1897), he urges that when a case is seen for the first time, make a careful examination of the heart, lungs, and kidneys, as well as the state of health of the other organs, and finally a diagnosis should be made, if possible, in regard to the immediate cause of complaint. What is true of cases in general is more particularly true of surgical cases, because there is increased danger of an operation in the presence of an imperfectly acting heart or kidney. If examination of the urine reveals the presence of severe renal disease, the absurdity of attempting a capital operation for other indications than the relief of the renal disease is apparent. In looking over the history of a number of abdominal cases the post-mortem record reveals a condition of the kidneys which was evidently the cause of death. The practical point is to estimate, in questionable cases, the daily quantity of urea excreted. It should be done to determine the approximate extent of renal destruction present—to determine if there is sufficient functional ability of the kidneys to undergo the excessive strain which will be put upon them by a surgical operation. I have used the term *functional ability* to express the power of the kidney to secrete urine of a given specific gravity, in a given quantity and specified time. The amount of work a kidney can do depends more on its freedom from disease than upon the actual loss of secreting tissue. In many cases where one kidney has been removed the remaining one has done the work of the sytem, in a satisfactory manner, and the specific gravity of the urine from this single kidney has a wide range of functional ability, according to its degree of normality. In the presence of diffuse parenchymatous, or interstitial diseases, the urine has a low specific gravity, which is never greatly increased for any great period.

The problem is not a simple one, as will readily be seen by a consideration of the factors which determine an increase or decrease in the normal quantity of urea secreted in the 24 hours. The methods of estimating the quantity of urea are not exact, and a variation in the results will be found in analyses of the same urine by different methods. This demands that the analyses be made by a given method that the results may be uniform. A standard method should be used. The rough estimation of urea by the specific gravity of the urine formulas should be discarded as entirely unreliable in the cases where accuracy of the result is most wanted. These rough methods may be of some value, however, owing to simplicity in cases with urine completely devoid of albumen and sugar; but even here, if there is any evidence of interstitial changes in the kidneys, they should not be relied upon.

A normal amount of urea passed daily varies greatly: A healthy man passes on the average of 25 to 40 grammes in 24 hours. Women and children excrete a lesser amount in the 24 hours, but in relation to their weight the quantity is greater.

The character of the food eaten has much to do with the amount excreted.

O. von Franque's examinations of the quantity of urea excreted under variable diet is as follows, viz.:

On purely animal diet.....51-92 grms.
On mixed diet.....36-38 grms.
On vegetable diet.....24-28 grms.
On non-nitrogenous diet.....16 grms.

The amount of urine secreted is an important consideration in estimating the quantity of urea for the purpose of determining the functional activity of the kidneys.

In severe organic disease of the kidneys, where under ordinary circumstances the daily excretion of urea is much diminished, an increased flow of urine from the influence of certain drugs will sometimes cause an increase in the daily amount of excreted urea. This is especially true where dropsy has been present, and the urea stored up in the dropsical fluid. The specific gravity of the urine, however, is not much changed. A diminution in the daily amount of excreted urea is found during the reaction from active processes of retrogressive metamorphoses incident to inflammatory changes in the body and febrile disturbances. During the period of active metamorphoses there is an increase in the production of urea, subsequently there is a decrease, and lastly a gradual rise in quantity, until the usual amount is again excreted. If there is chronic disease, with much past suffering, the patient bedridden, the appetite poor, emaciation progressive, the subject perhaps reduced to skin and bones, the daily quantity of urea eliminated, even though the kidneys are in good working order, will be much below the normal average.

Just what amount of urea should be present in the 24 hours of a case intended for operation will vary greatly, according to the above circumstances. Under any circumstances one would not feel justified in performing a severe operation where the daily quantity of urea excreted is less than ten grammes. Fifteen grammes of urea is also a small quantity and should warn one that an operation may be dangerous. If, however, the specific gravity is high, and can be increased, say to 10.20 or 10.25, it is not so great a contraindication for operation. Ordinarily there should be from 20 to 30 grammes daily.

A careful study of the condition of the urine following severe surgical operations, and especially where the abdomen has been opened and much time consumed, with prolonged use of anesthetics, shows that as a result there is a tendency toward diminished secretion in the 24 hours, with an increase in the specific gravity. Dark and even bloody urine has followed severe abdominal operations, and I have not infrequently seen the specific gravity above 10.40.

From *a priori* reasoning, it would seem that an explanation of the dangers of surgical operations in the presence of diseased kidneys is found in the following facts: That st. sp. gr. of the urine of a chronically diseased kidney is low, and the relative amount of urea is diminished. If the normal daily quantity of urea is passed, it is done by increasing the amount of urine, as it is impossible to raise the percentage of urea to the normal standard. As a result of operation, whether from the effect of the anesthetic, the increased metamorphosis, or the absorption and elimination of the albuminous products resulting from the local destruction of tissue (superficial necrosis), along the line of a dissection, there is a demand on the kidneys to remove in concentrated solution an excessive amount of urea and other products. This they are incapable of doing, and a resulting accumulation of the products in the system causes a *toxæmia*, often with sudden fatal termination, with symptoms of severe depression, resembling in many respects the manifestations of severe shock, and consisting of lowered temperature, rapid pulse, headache, nervousness, perhaps diarrhœa, sweating (cold and clammy), etc., vomiting and a feeling of impending dissolu-

tion. The symptoms, as a rule, differ from the usual effects of uremia, in the absence of convulsive movements and the sudden decrease.

The practical conclusions from the above facts relate to the extra risks of operation in the cases complicated with renal diseases and the special precautions to be employed as preventive measures. If the surgeon finds a low specific gravity urine with a trace of albumen, and the operation in question is severe, *it is his duty* to further investigate the urine and determine the functional ability of the kidney. If the case then proves to be one of questionable danger, the urine should further be subjected to the examination of the expert chemist, and his unbiased opinion obtained in regard to the dangers of an operation from renal sources. If the case proves to be one where the kidneys are impaired, but probably are in good enough condition to carry the patient through the strain of the operation, then every measure should be taken to assist the organs in carrying on their peculiar functions. These measures consist in throwing the work of elimination as much as possible on the other organs, and in dilution of the urine by increasing the watery element.

The best means at our disposal for accomplishing these purposes may be briefly summarized as follows: *At the close of an operation* give a high rectal enema of normal salt solution at a temperature of 102° F from two to three pints in quantity; at the same time give a subcutaneous injection of this solution of from one to two pints under the breasts or the loose skin of the abdomen. Apply hot poultices of digitalis leaves over the region of the kidneys. Use the nitrates hypodermatically, and as reaction sets in, if there is evidence of uremia, produce sweating by means of pilocarpine or dry heat. The bowels should be opened as soon as possible by gentle cathartics and later by the use of hydragogues. if the case demands it.

Case of Inversio Uteri and Attached Placenta Post-Partum—Remarks upon the Ætiology of Puerperal Inversion of the Uterus.

Dr. George Tucker Harrison, New York, read before the Woman's Hospital Society, February 9, 1897, the following report (*Amer. Gynec. and Obstet. Jour.*, May, 1897):

On December 30th, 1893, I was called to Mrs. G., aged 33 years, in labor with her third child. She had a narrow pelvis. Finding that the os was well dilated, but that the head was still detained at the brim, I decided on podalic version. She was therefore brought under the influence of ether by Dr. Gessner Harrison, and I delivered a living child in a few minutes. After the birth of the child Crede's method was attempted, but the uterus showed no disposition to contract; on the contrary, there was a marked condition of *atony*. Efforts to stimulate the uterus to contraction were made intermittingly. After the expiration of about three-quarters of an hour, during a pause in my attempts at securing contraction, the woman made violent bearing-down efforts, and, to my astonishment, a complete inversion had originated. The placenta was attached firmly to the fundus. The whole mass lay in front of the external genitalia. The hemorrhage was not of a profuse character, and as the woman was still partially under the influence of the ether, there was no shock. The placenta was peeled off by digital manipulation, and the uterus immediately reinverted. As the ring of contraction was not firmly contracted, I had no difficulty, after depressing the fundus, in carrying it upwards until the whole organ was restored to its normal condition. Ergot was administered by hypodermic injection over the symphysis and good contraction secured. In view of the circumstance that strict aseptic methods were used in the management of the labor, the woman recovered without a bad symptom.

Inversion of the uterus, *post-partum*, is a rare event. Of the exceeding rarity of this morbid condition an idea may be formed when we are told that in the St. Petersburg Lying-in Institution, in a period of fifty-four years, during which 200,000 births occurred, not a single case of inversion was observed. In the Dublin Rotunda Hospital one case of inversion occurred in 190,000 births. The genesis of puerperal inversion is not only of vast importance in the interest of scientific truth, but also in a reverberative sense, as affecting the skill of the obstetrician. In most works on obstetrics, external violence is invoked to a great degree as a factor in the production of inversion. According to Barnes, in numerous cases, "the accident followed pulling upon the cord, or other forcible attempts to deliver the placenta." This author also calls attention to the fact that several histories state that "inversion occurred during strong pressure on the abdomen." W. Beckmann, however, has carefully studied one hundred cases of inversion, and attained to the conviction that inversions occur most frequently in primiparæ and young persons, and that violent manipulations rarely play the most important rôle in the ætiology; that, on the contrary, more or less constant conditions existing in the act of birth itself bring about

the puerperal inversions in the majority of cases.

The necessary and essential condition precedent to the origin of a puerperal inversion is the relaxation or flabbiness of the just accouched uterine body in its upper part and an open os. Two modes of origin must be discriminated: the one evoked spontaneously and the other by traction on the umbilical cord. Spontaneous partial inversion, the first stage of Crosse, constituting externally a cup like depression, as a necessary postulate, presupposes an atonic condition of the uterus at the time of the expulsion of the child. In the genesis of inversion the attachment, more or less firm, of the placenta plays a conspicuous part. Hennig believed that the insertion of the placenta, at the fundus, greatly favored the occurrence of inversion. So far as traction on the cord is a factor in the origin of inversion, it may be considered as demonstrated that this is only possible when there is complete atony and the placenta quite firmly attached. When the placenta is partially detached and there is a condition of complete atony, the weight of the placenta may be considerably increased by the blood accumulating behind it, and consequently the atonic part of the uterus, to which the placenta was attached, may be drawn after it and thus a beginning inversion caused. The increased action of the abdominal muscles in bearing-down efforts favor the origin of inversion if there are no uterine contractions.

Early Diagnosis of Spinal Caries

Mr. Noble Smith, F. R. C. S. Ed., Surgeon to the City Orthopædic Hospital, etc., in a paper on this subject (*Med. Press and Circ.*, May 12), limits his remarks to the two most common spinal disorders, namely, *lateral and angular curvature.* In considering their earliest symptoms, it is necessary to be as clear as we can be as to the nature of these disorders.

Tuberculosis is undoubtedly the chief constitutional disease which gives rise to *angular curvature;* whereas with regard to *lateral curvature* opinions differ considerably as to the etiology.

The opinion that lateral curvature depends chiefly, or entirely, upon weakness of the muscles of the back will not bear the test of practical experience, for although there are undoubtedly a large number of instances in which weakness of these muscles exists, yet (and this seems to have generally escaped observation) the muscles are only weak co-existently with the weakness of other tissues of the body, the joints of the spine being also weak and giving way too readily. We meet also with a considerable number of cases in which there are no signs of muscular weakness, in which, in fact, the muscles are remarkably well developed, and yet the spine has become seriously deformed by unmistakable lateral curvature.

However, as a rule, it is among the weakly children, and especially those who have a family history of tuberculosis, and in whom we might naturally expect to meet with caries, that we also find weakness of the back leading to lateral curvature, and therefore the constitutional condition of the patient will be no safe guide in forming our diagnosis. Of course, if a child be suffering from unmistakable disease of one or other joint, *morbus coxæ*, for instance, and symptoms that might be attributed to caries of the spine occur, these latter symptoms would have a greater import. On the other hand, should there be no sign of tuberculosis, and should the patient be robust and apparently healthy, and yet show symptoms of giving way in the spine, in its posterior or lateral aspect, we shall yet not be justified in excluding caries as a possible condition.

Pain.—We all know the classical first symptoms which are ascribed to caries, such as languor, listlessness, and unwillingness to move quickly, the limited action being associated with *pain and rigidity.* The absence of pain is a subject requiring further notice.

When I first began to write about *absolute absence of pain* in many cases of caries, the possibility of such absence was not generally acknowledged; in fact, pain is not infrequently absent. When pain exists in the early stages of spinal disorder, it is a most valuable symptom, and especially if it occurs at the peripheries of the nerves coming from the locality of the spine in which some local symptoms are present. In *incipient lateral curvature* there may be pain, but I have never seen in such a case that extreme caution which generally accompanies the pain of caries.

Tumefaction about the neighborhood of the diseased vertebræ is very characteristic of acute caries.

High temperature.—A temperature slightly above normal, but persisting day after day, varying between quite normal in the morning and one to two degrees higher at night, is a most important symptom of caries. However, one meets with instances of caries in which no rise of temperature can be detected, and therefore its absence does not indicate, for certain, an absence of caries.

Rigidity.—In caries there is usually more or

less rigidity of the spine in the neighborhood of the disease. This symptom is one of the most important, but it is not so clearly defined as in cases of inflammation of the more movable joints, such as the hip and knee; sometimes it cannot be detected at all.

If the disease be in the lower dorsal or lumbar vertebræ, causing slight posterior projection, it may be a question whether the projection is the result of posterior curvature from weakness of the ligaments of the spine or from caries. Under such circumstances, the presence or absence of rigidity should be determined. The patient should be placed in the prone position, when, if the case is one of weakness only, the projection disappears, while if inflammation exists, the projection remains more or less permanent. Careful elevation of the legs, while the patient lies in the prone position, will intensify this result. Movement in other directions will also generally be found limited, as a consequence of the rigidity when caries is present.

In cervical caries, the rigidity shows itself in stiffness of the neck muscles, and this often affects the head laterally, producing wry-neck. There is usually a great difference between *wry-neck from caries* and *that from permanent muscular contraction.* In the latter it will probably have existed for a long time, and there will be little or no pain, or at least pain of a less distressing nature; there will be firm and unalterable contraction of probably the sterno-mastoid muscle alone, and the face may be atrophied on the depressed side and the features distorted.

In caries, other muscles as well as the sterno-mastoid will probably be affected, and the head will be held in a manner more expressive of pain, and support of the head with the hands will relieve the contraction and the pain to some extent.

In simple torticollis, the movements of the head are only restricted in one direction; in caries, the head is kept in one position, but not commonly restricted in any if carefully handled; because in torticollis from caries, movements in any direction are painful, whereas in true torticollis, pain, if any, only occurs from movement in one direction. Rest in bed for a few days will often partially relieve the torticollis of caries.

In the latter affection there may be a condition of spasm of the muscles, and in adults it may be difficult to distinguish between this disease and "spasmodic torticollis."

I have known torticollis having all the characters of the simple affection to exist in a child for many months before it has been recognized as a symptom of disease of the bones. Inflammation of lymphatic glands of the neck alone may produce torticollis, and this may be very difficult to distinguish from caries in its early stages. In caries of the cervical vertebræ there *may*, however, be very free movement.

The nerve symptoms in caries take a most important place irrespective of their production of pain, and although they become better defined as the case advances, yet even in the early stages they are generally present, and are then of great value. Spasmodic movements of the legs, and especially night cries, are important early symptoms, and there are many others too well known to need discussion. Then there is the characteristic grunting respiration with which we are all familiar.

Deformity belongs more especially to advanced stages of both lateral curvature and caries, but there may be considerable difficulty even when the deformity is present.

In 1889, Dr. Bernard Bartow, in a paper before the New York State Medical Society, stated that some degree of lateral distortion occurs in almost every case of caries of the spine, appearing even before any angular deformity. I have not seen this symptom so commonly as Dr. Bartow has, but agree with his explanation of this complication. He considers that it is caused by attempts of the patient to rest the inflamed part of the spine, when a lateral deviation takes place. The vertebræ rotate as a natural mechanical result, and the voluntary reflex action of the muscles immobilizes the bones in such a position.

In my work upon "Spinal Caries," 1894, I described and figured several cases of this kind. The lateral deformity referred to under these circumstances doubtless arises from weakness, and is independent of the lateral curve in which caries commences on one side of the spinal column.

When lateral curvature is a sign of commencing caries, the deflection may be more acute than in scoliosis, and there may be posterior projection as well as lateral curvature. There may be projection of spinous processes in the latter condition, but a distinction is to be drawn between the two when the patient stoops. The spinous processes in caries do not as a rule separate from one another, whereas when no ulceration of bones exists they do.

Caries sometimes attacks limited portions of the vertebræ, such as central portions or on the surface of the bones, forming cup-like cavities. Under such circumstances the ordinary symptoms will be very much modified and the char

acteristic deformity will be absent. The possibility of the existence of congenital lateral curvature from the absence of part of a vertebræ should also be borne in mind.

The term angular curvature is, I think, unfortunate, especially in respect to this subject of diagnosis, for many cases occur in which, especially at their commencement, general roundness of the back exists, and no angle is formed.

Rontgen Rays.—The use of the X-rays in the diagnosis of spine disease has been of great value in some cases. Of the cervical region very good skiagraphs have been made. And in the lumbar region, in thin and delicate subjects, valuable information has been obtained by this process; but the dorsal vertebræ are so much obscured by the sternum and the other dense tissues to be penetrated, that no very clear observation has as yet been practicable.

When we have no certain signs by which we can determine with certainty whether the case is one of caries or simply weakness, we should observe the utmost caution, and should not treat the patient as if no inflammatory disease were present. In many instances caries is rapidly developed by rough and incautious treatment, especially from the very popular treatment of weak backs by gymnastic exercises. Delicate children whose backs are weak in conjunction with general weakness of the body, should be treated by rest and support in the early stages of their trouble.

Retroversion of Uterus—Results of Operations for.

Dr. A. Lapthorn Smith, Surgeon-in-chief of the Samaritan Free Hospital for Women, etc., Montreal, Canada, read a paper before the American Gynecological Society, held in Washington, D. C., May 6th, 1897, giving the results of one hundred and forty-seven operations for retroversion of the uterus. His paper was based upon ninety-four ventro-fixations and fifty-three Alexander's operations. He held that ventro fixation was the only operation that should be entertained in cases of retroversion with adhesions; but it should not be done when the uterus was movable, and when there was no disease of the appendages requiring abdominal section, in which cases Alexander's operation had given most excellent results. There should be no death rate to either operation, neither should there ever be hernia, either ventral or inguinal, if the following directions are followed. The two operations were equally easy, although a few years ago the author was opposed to Alexander's operation on account of its difficulty. Now he could invariably find the ligaments, and generally in from half a minute to a minute and a half. He warned his hearers not to do Alexander's operation if there were any adhesions, even if they were loose enough to permit the uterus to be lifted up; because they would be put upon the stretch and would drag so much upon the ligaments as to finally pull them out of their anchorage. In laying down the technique of Alexander's operation, he placed great stress upon the importance of putting aside all cutting instruments, as soon as the skin, superficial and deep fascia had been cut through. Instead of laying open the inguinal canal, as advocated by some writers, he advised his hearers not to cut a single fibre of the intercolumnar fascia, which was the principal support of the pillars. Moreover, he said, the slightest nick of the fascia of the internal oblique would lead to a false passage and failure to find the ligament. If no cutting instruments were used, but only a Peans forceps to draw out the ligament, there would be no difficulty in finding it, because there was nothing else in the canal but the ligament. In fact, with the eyes bandaged, it could be found and drawn out, simply by introducing the closed forceps, and then opening them, when the round ligament will fall into them and can be drawn out. He advocated the use of fine silk-worm gut, which could be thoroughly sterilized and left in permanently. Occasionally he had been obliged to remove a buried stitch. In case any fibres of the intercolumnar or internal oblique should be accidentally cut, great care should be exercised in sewing them up to avoid hernia. He had only had one relapse after ventro-fixation and one after an Alexander, which were both subsequently repaired. Several of the cases of ventro-fixation had since become pregnant, and had had normal confinements; also several cases of Alexander had had children. Many of the patients had been bed-ridden invalids for years before, and were now enjoying excellent health. Both operations, each in its proper sphere, had given the greatest possible satisfaction.

Chloral to Prevent Nausea of Morphia.

Dr. W. H. Cowan, of Shiloh, Tex., says (*Med. World*, May, 1897), to prevent the nauseating effect of morphine on particular individuals, he is in the habit of following the administration of morphin, in from twenty to thirty minutes with a three to five grain doses of chloral hydrate. He says this "effectually prevents the nausea."

Artificial Respiration.

Dr. Charles O'Reilly read a paper on this subject before the Toronto Clinical Society, March 10th (*Canadian Practitioner*, April, 1897). He presented the Fell apparatus for doing forced respiration, and also one of his own devising. Failure of breathing of a non-obstructive character arose from various causes, such as an overdose of anæsthetic, affections of the lungs, and bronchial tubes, syncope from anæmia or heart failure, an overdose of morphine, chloral, gas, and suffocation from drowning. He reviewed the methods proposed by Sylvester, Howard, Hall, and others. In certain cases where there was rigidity of the muscles of the chest or of its walls, forced respiration was probably the best procedure. This procedure has been recommended at various times. Fell's (of Buffalo) apparatus, as offered to the profession, was too expensive. It, however, could be readily improvised by the physician. He then showed one he had made. He had not yet had the opportunity of using it. The apparatus consists of a pair of hand-bellows, a long rubber tube in which a valve is placed, which is opened when respiration takes place To the oral end of the tube is attached a mouth-piece, which fits tightly over the face. In cases where it was necessary to do tracheotomy, a special tube was used for insertion into the trachea. Dr O'Reilly's own device was a most ingenious one. It consisted of a garden hose tube. One end was attached to the perforated top of a tin pail which contained lime water, through which the inspired air was drawn. One coil was then made in a pail of warm water to warm the air as it passed through the tube, then proceeded to the bellows and from the bellows a tube led to the mouth-piece.

Negro Statistics in the United States.

The colored population of the United States now numbers 7,638,360, representing close upon an eighth of the total population. A comparison of the 1870 and 1880 census showed an apparent increase among the blacks of 35 per cent., whereas the whites, even including immigrants, had only increased some 27 per cent.; but, according to Mr. F. L. Hoffman, these figures are erroneous, owing to the perfunctory way in which the census of 1870 was made. More recent investigations show. on the contrary, that the blacks are virtually less prolific than the whites, in that an enormous and increasing proportion of the infants die before the first year of life. There is no gainsaying the fact, however, that the negroes are gradually becoming more numerous in certain specified regions, and they show a special predilection to gravitate towards the towns. The birth rate among the black population is higher than the white birth rate, but this, as already stated, is more than compensated by the very high infantile death rate. Up to the age of 15, the negro death rate is 32.6 per 1,000, as compared with 20.1 per 1,000 among the whites. Moreover, this high death rate tends to increase rather than the contrary—syphilis, scrofula and phthisis being among the most fatal maladies; but they also appear to be more susceptible than the whites to malarial affections, paradoxical as this may appear. Another interesting feature is the decay of the institution of marriage among the blacks, the proportion of illegitimate births being 22.5 per cent., while among the whites it does not exceed 2.9.—*Med. Press*, April 14.

Diagnostic Sign of Tuberculosis of the Bladder and Urethra.

According to *La Revue Medicale*, March 24, G. Filarétopouli has observed a form of infiltration of the meatus when tuberculosis occurs in the urethra, which he thinks of diagnostic value, and which does not seem to be mentioned in the books. When the meatus is so infiltrated, the orifice is everted, is not perfectly smooth, and when compressed from above downward between the thumb and finger a certain resistance is experienced. The everted membrane is of a bluish color. This sign is not pathognomonic of tuberculosis, but raises a strong presumption that it exists, if it is accompanied by a discharge which is aggravated by injections of nitrate of silver, and if the urine is highly acid.—*Medicine, May*, 1897.

Abdominal Palpation as an Aid in Labor.

Dr. R. W. Seay, Lutcher, La., says (*New Albany Med. Her.*, May, 1897).

When labor has progressed so far that the pains are frequent and strong, the woman being at full term, if the accoucheur makes firm abdominal palpation with one or both hands, while the pain is on, he aids the expulsive powers of the uterus. By firm palpation we mean just sufficient force to prevent the uterus rising too far forward or laterly, and thereby weaken the expulsive powers of that organ, and yet not enough pressure to injure it or the surrounding organs. We are well aware of the aid given by contraction of the abdominal muscles, and also should the contraction of these muscles from weakness or other cause not be sufficiently strong, it will act as retarda-

tion or inefficient contraction of the uterus. The firm palpation should be made on the fundus, superior, anterior or lateral part, so as to promote the passage of the fœtus as is usual in normal labor. In this way we aid the action of the abdominal muscles without doing injury. We are well aware of Crede's method of expulsion of the placenta, also that kneading the womb is an aid in the third stage of labor, but I have found no author to recommend firm abdominal palpation in the first and second stage of labor.

Speedy and Easy Treatment of Sprains.

Dr. I. A. Bridges, of Gilford, Me., has this to say (*Atlantic Med. Weekly*), May 15, 1897, regarding the treatment of sprains: "For the past two years I have ordered rest for the injured member, applications of electricity, once a day for five to seven days, and massage. In most instances, my patient can use the injured joint with freedom at the end of a week. I regard this mixed treatment as the best that has come to my notice; for it gets the patient well in a much shorter time and saves him days of suffering."

The patient presents himself, with a joint highly inflamed, extremely sensitive to the touch, and full of pain. At once use the faradic current of tension for a period of thirty minutes. At the end of that time the temperature of the joint is lowered, the pain has disappeared and the joint can be freely handled. Immediately begin massage, commencing at the elbow, if the injured joint is the wrist, or the knee, if it is in the ankle, and continue for five minutes. This is to be repeated twice during the day, by some member of the family. "This is all that I do." This mixed treatment, so Dr. Bridges states, he has employed in many cases, and so far he has had no failure.

Dyspeptic Cirrhosis.

In the recently issued book (by G. P. Putnam's Sons) of Dr. Emile Boix, after a thorough review of the causes of cirrhosis of the liver, "and particularly the cirrhosis produced by auto-intoxication of gastro-intestinal origin (clinical, anatomo-pathological pathogenic and experimental study)," the following propositions are among the conclusions:

1. Alcohol is not everything in the etiology of cirrhosis of the liver. Its pathogenic rôle demands a searching enquiry which a long term of years can alone bring to a successful termination. In fact, it is indispensable that the condition of the alimentary canal should be carefully investigated with those suffering from cirrhosis, and an attempt made to ascertain if, with them, fermentations of gastro-intestinal origin do not give rise to the production of substances which are endowed with properties both irritating and toxic to the liver.

2. Entirely independent of the alcoholic habit, we frequently encounter a pathological condition of the liver with dyspeptics, which is manifested by increase of the size of this organ; *it is the dyspeptic liver.*

3. This increase of size is temporary or permanent. Temporary, with frequent returns, it constitutes the *hepatic congestion* noticed for a long time by various authors, and especially by M. Bouchard. Permanent, it is *dyspeptic cirrhosis.*

4. This *dyspeptic cirrhosis*, described for the first time in this work, is manifested: *clinically*, by an enlarged liver, smooth, *remarkably hard* (like wood), without increase in size of spleen, without icterus, ascites, or development of the collateral abdominal circulation; *histologically*, by a diffused generalized cirrhosis, inter- and intra-lobular, with mono-cellular tendency, with relative integrity of the hepatic cells.

5. The duration of such an affection is very long, ten years and more, the size of the liver remaining almost the same. The termination may take place, as in the atrophic cirrhosis of Lænnec, by exaggeration of the mechanical interference and production of ascites and enlarged abdominal veins, and also by terminal infection. The prognosis is then, as always, connected with the condition of the hepatic cells.

6. Among the toxic substances which are elaborated in the alimentary canal, we must consider the acids of fermentation as possessing a marked sclerogenic action: butyric, lactic, valerianic, and especially acetic acid. As to *coli-toxin*, it is probable that it also has a sclerosing action upon the liver, unless it reaches this organ in an amount sufficient to rapidly destroy the hepatic cells.

7. We must also take into consideration the predisposition most frequently created by gouty diathesis (*arthritisme*, Hanot).

8. Dyspeptic cirrhosis can only be confounded with cancer of the liver, from which it is distinguished by its very long duration; or with a large lithiasic liver (*lithiasique*), which is most frequently accompanied by icterus; or with an enlarged alcoholic liver; with which we will ordinarily find a large spleen and very soon ascites and enlargement of the subcutaneous abdominal veins.

9. The treatment should be especially ad-

dressed to the digestive functions. Intestinal antisepsis will be of very great assistance, and will give very satisfactory results, especially in the congestive forms. Calomel, in the dose of one centigram, may be successfully prescribed.

Argentamin

Is said to be an efficient, non-irritating substitute for nitrate of silver, especially valuable in the treatment of gonorrhœa. It is a solution of the ethylendiamine-nitrate of silver, one hundred parts of which contain ten parts of nitrate of silver and ten parts of ethylendiamine. Ten parts of fluid argentamin, therefore, equal one part of solid nitrate of silver. Hence, to prepare solutions of equal percentages, with those of nitrate of silver, ten times the amount of the fluid argentamin must be employed.

Advantages Over Silver Nitrate:

1. Argentamin is not caustic in medicinal solutions.
2. It is far stronger in antiparasitic action than the nitrate of silver.
3. It is not precipitated, as is the nitrate, by the saline and albuminous solutions that are found in the urethra under physiological conditions. The ethylendiamine contained in it readily dissolves both albumen and silver chloride.

In consequence of these properties, it has a much deeper and farther-reaching effect than the nitrate of silver. The albumen and the chloride of sodium of the tissue fluids precipitate the latter in the form of an insoluble and inefficacious silver salt, and its penetrative power is, therefore, slight. Argentamin can penetrate deeply into the tissues, thus destroying gonococci among the lower epithelial layers, and rapidly curing the gonorrhœa.

Applications.—Argentamin can be used in all cases suited to the exhibition of the nitrate of silver. It has been employed with especially favorable results in gonorrhœa (Professor Neisser, Dr. Schaffer *Zeitschr. fur Hygiene und Infections Krankheiten*, 1894, Vol. Letter XVI), Dr. Aschner (*Therapeut. Wochensch*, 1895, page 464), Professor Fritsch, Dr. Albertazzi, etc.); in ophthalmology, (Professor Hoor, *Aerztliche Rundschau*, 1897, No. 9, p. 136); and in gastric catarrh (Dr. Riva Rocci, Dr. Levy, *Univ. Med. Jour.*, May, 1896).

Dosage in Gonorrhœa.—In anterior urethritis—℞. Argentamin 1.0 (15 grains)—equal to 0.1 (1½ grains) of silver nitrate. Aquæ distillatæ, 400 to 500 (13 to 16 ozs.). Mix.

In posterior urethritis—℞. Argentamin, 1.0 (15 grains). Aquæ distillatæ, 50 to 100 (1½ to 3 ozs.). Mix.

According to Dr. Schaffer, another prescription reads as follows for *anterior urethritis.*—℞. Argentamin, 1.0 (15 grains). Aquæ distillatæ, 100 to 200 (3 to 6 ozs.). Mix.

For posterior urethritis—℞. Argentamin, 1.0 (15 grains) Aquæ distillatæ, 25 to 100 (6 drachms to 3 ozs.). Mix. Sig. Injection.

In Gastric Catarrh—℞. Argentamin, 1.0 (15 grains) Aquæ distillatæ, 1000 (1 quart.) Mix. Sig. For lavage of the stomach.

Supra-Pubic Cystotomy.

In a discussion before the Philadelphia County Medical Society, April 28, (*Med. & Surg. Rep.*, May 22, 1897), Dr. M. Price has performed supra-pubic cystotomy three times for enlarged prostate and twice for stone, and has been much pleased with the operation in both instances. In the cases of stone, a diagnosis had not been made, although good men had seen them a number of times. No stone could be found, although all the symptoms of stone were present. In both cases the stone was encysted posterior to the uretha, and almost behind it. It was impossible when sounding to touch the stone at all. The bladder was opened above the pubis for diagnosis, as well as treatment. Both patients recovered nicely.

In regard to the operation for enlarged prostate, Dr. Price did not think that any other procedure can begin to offer the same chances of success with so little risk. In his three cases the patients are wearing the Hunter McGuire button, for the reason that the mouth of the bladder has been almost entirely obliterated. One was a man 83 years old; another 81. The older man was an old friend, and had not attended his meeting for four years, because he was kept almost continuously emptying his bladder. When seen by Dr. Price his bladder was distended with three or four quarts of urine. The bladder was opened without any trouble, having been pushed above the navel, and there being no question of peritoneum it was perfectly safe to go directly in and empty.

Dr. Price did not believe that drainage of the bladder, immediately after operation, should be trusted to the drainage-tube itself. The tube is best made of rubber, because this does not irritate as much as glass. It should be emptied, not by gravity, but by syringe, and for a sufficient number of hours to avert extravasation In the two cases of stone and enlarged prostate, Dr. Price opened the peritoneum, which gave him no especial anxiety. He used no rubber bag, no artificial means

whatever; nor did he inject the bladder, but he simply went in, and brought the bladder up to the abdominal wound, protecting the peritoneum by gauze, whip-stitched the bladder around to its peritoneal border, and then put in not only a rubber tube, but gauze, packing the wound just at its union with the peritoneum. In neither case was there any trouble. It was quite a while before the wounds granulated and the patients could use the button. Drainage should be attended to by the nurse, and emptied with a syringe. In opening the peritoneum Dr. Price recommended, after the skin, fat and tissues down to the alba linea have been incised, the use of forceps, going down, picking up tissue and pulling it forward until the bladder is reached. In this way it should not take a man more than one and a half minute to get into the bladder, while all need of a rubber bag in the bowel is obviated.

In regard to the supra-pubic operation for stone, Dr. Price is sure of its being safer even than crushing; if he had a stone in his own bladder, he should insist upon its removal by the supra-pubic route.

He would rather have an inexperienced surgeon cut down on his bladder from above and remove stone, than permit a skilled hand to do so by crushing.

Dr. Price thinks castration for enlarged prostate uncalled for and unsurgical; he does not believe that it will do all that is claimed. He referred to the case of an old man, 83 years of age, whose prostate was as large as two fists, and who lived for four years after supra-pubic cystotomy, and then died of pneumonia. He could carry his water for three or four hours, the operation having given relief to the cystitis and the irritation.

Dr. John B. Roberts said that supra-pubic cystotomy is in itself almost free from danger. Complications may attend prostatectomy, such as diseased kidneys, perinephritis or pyonephrosis; but the operation is one of the easiest major procedures in surgery, and is certainly attended with a very low mortality. The supra-pubic section is by all odds the best operation.

It is not necessary to use the rectal bag. The Trendelenburg position, with about eight ounces of water in the bladder, seems to give perfectly satisfactory results. He has never used air, but always water. He has cut the peritoneum once, but without ill results. The membrane was sutured before the bladder was opened.

An objection to the bag is that it rather increases bleeding. Pressure in the rectum interferes to a certain extent with the circulation in the veins. He prefers the vertical incision, unless the bladder is a very small one. The transverse incision affords a beautiful view of the bladder, but the muscles slide up in their sheaths, and it is difficult to bring the upper and lower portions together in closing the wound. The suture should be put in the upper portion of each rectus muscle, above the intended line of suture. The thread will enable the operator to pull down the upper end after the division. The operation is an exceedingly good one.

Dr. Ernest Laplace believed supra-pubic cystotomy to be the operation whenever a source of irritation is to be removed from the bladder, or when the bladder is to be put at rest, and that comprises all the affections of the bladder demanding operation. To-day it is precisely understood what drainage ought to be, and its commonsense employment, with a simple knowledge of the anatomy of the bladder, makes this operation free from danger. As to the relative importance of litholapaxy and supra-pubic cystotomy, the consensus of opinion some time ago because of the report of cases by Dr. Kerr, from China, was that preference would be given to the former operation when it could be performed. Dr. Laplace then maintained that the ideal operation on the bladder was supra-pubic, because a plain incision into the bladder, made in a cleanly way, is less grave than working in the dark, as in litholapaxy. The mucous membrane may be grasped and lacerated, and one cannot be sure that all stone has been removed, leaving no nucleus for more. Dr. Laplace has done supra-pubic cystotomy thirty-five times, and has lost but one case, occurring in an old man, who died of uremia. The operation was performed a number of times for stone, and a number of times for tuberculosis of the bladder. For giving the bladder a rest there is no operation to be compared with it. For enlarged prostate, Hunter McGuire's button is of aid

Dr. Orville Horwitz said that in several cases, in placing the drainage-tube in the wound and sewing it in place, he has put a suture loosely through the wound, and left it loose so as to tie it down after the drainage-tube was removed. He always removes the drainage-tube on the second day, unless he follows the Hunter McGuire operation. In this way one may be sure that the little opening will be closed at the end of from twelve to fourteen days, and no sinus will be left. Many operators state that they have difficulty in getting the supra-pubic opening to close. This is due to leaving the drainage tube in too long.

Leaving a loose suture in, and removing it on the second day, has not proved successful. Stitching the edges of the bladder is very well in the Hunter McGuire operation, but in ordinary cases this is not a necessary procedure, and may be regarded as a waste of time. The drainage tube applied in the way described has been all that is necessary.

It is not advisable to pick up the tissues over the bladder, after the recti muscles have been separated by hemostatic forceps, and then divide them, layer after layer, until the bladder is reached. The knife should not be employed after the sheath of the recti muscles had been divided, until it is desired to puncture the bladder.

In the patient who had an enormously hypertrophied prostate, with stone in the bladder, it was impossible to introduce anything except a rat-toothed catheter, and that with a great deal of difficulty. He was an enormously stout man. Not only a vertical incision was made, but also the incision of Treves, cutting muscles on both sides. When the bladder was opened, a large portion of the prostate was removed in the usual way. Six calculi were found, weighing together six and a half ounces. The hæmorrhage was very profuse. A portion of gauze was packed into the wound. By the electric headlight it could be seen that the ureters were not blocked, and the gauze was allowed to remain four days, when the patient was etherized again, and the packing removed. The edges of the wound were curetted and approximated, and a drainage tube inserted. This was replaced in three or four days by a soft rubber catheter. In a few days nice recovery followed. Therefore, if there is any tendency to the formation of a permanent fistula, the patient should be put to bed, a soft rubber catheter inserted, and the wound touched with silver nitrate.

The bladder can be opened without the use of the rectal bag; but with it distended with water the bladder is rendered more accessible. After the bladder is opened, and further interference is required, the floor of the viscus, instead of being deeply seated in the pelvis, is lifted well up, and manipulation is facilitated. The use of the bag does give rise to a little more hæmorrhage in the walls of the bladder, but with ocular exploration the vesical veins can, as a rule, be avoided, and as soon as the water escapes from the bag, the hæmorrhage ceases The rectal bag is, therefore, a decided advantage. If, however, the bladder is merely to be drained, as in case of retention of urine due to hypertrophied prostate, or in the operation for Hunter McGuire's button, the rectal bag is not needed.

Dr. Horwitz expressed the conviction that the crushing of stones in the bladder is a very dangerous procedure, even in the hands of the specialist, as a general thing. As a rule, the safest operation is suprapubic cystotomy in cases of vesical calculus. If the stone is small and the kidneys healthy, crushing would be indicated.

Guaiacol in Puerperal Eclampsia.

Dr. J. F. R. Appleby (*Boston Med. and Surg. Jour.*, March 18, 1897, according to *North Amer. Pract.*), says: When guaiacol is poured upon the abdomen, it is rapidly absorbed. Its physiological effect is to cause rapid and marked lessening of arterial blood-pressure, lowering of temperature and free diaphoresis. These physiological effects first led me to use it in a case of *nephritis attended with slight convulsions* and a full, hard pulse. Patient, adult male. Twenty five drops were poured upon the abdomen, and rubbed in with the tips of the fingers. Relief was certainly marked.

Next I used guaiacol in two cases of *puerperal eclampsia*, with surprising and happy results. Primparas. In the first, labor was progressing favorably; dilatation had been accomplished; occiput had begun to descend, when convulsions came on, becoming more profound with each recurring seizure. As soon as practicable, chloroform was administered, and a large male child was delivered with forceps. On the anæsthetic wearing off, convulsions returned, whereupon I poured forty or fifty drops of guaiacol (case too urgent to take time to count drops) upon the abdomen and gently rubbed them in, as in the preceding case. In a few minutes pulse became soft, free diaphoresis set in, and convulsions died away.

Second patient had been delivered by a midwife. Baby and placenta had come away, when convulsions set in. The patient was enormously swollen over the whole body; pulse was full, hard and tumultuous. Convulsions were almost continuous. They were as powerful, if not more powerful, than any I have seen. It looked like a hopeless case. I used forty or fifty drops of guaiacol and gave a hypodermic injection of one-tenth of a grain of sulphate of morphia. In less than an hour the patient was sleeping quietly, and no more convulsions followed.

Both cases had albuminuria and were much swollen, which symptoms demanded treatment for a few days. Both are now enjoying ordinary health.

For guaiacol there may be claimed certainty of action, speedy relief of urgent symptoms, and ease of application, which renders it perhaps more desirable and less objectionable than any one of the remedies heretofore used in eclampsia.

In neither case was it necessary to make a second application, but I would certainly have done so had it been necessary.—*Pittsburg Med. Rev.*, May, 1897.

Simple and Rapid Method of Gastrostomy.

The late Dr. R. J. Hall, Santa Barbara, Cal., according to the *N. Y. Med. Jour.*, May 29th, said: Witzel's, Frank's, and Kader's operations are already so simple in technique, and give such perfect results in preventing leakage, that it may well appear superfluous to suggest any improvement on what Miculicz, in speaking of Kader's method, calls the "ideal." Such operations, however, are usually performed on patients much reduced by starvation and the progress of their disease, and the saving of even a few minutes may be of the greatest importance. Before reading of Kader's operation, I had devised and tried upon a dog a method which, while giving a result almost identical with his, is certainly simpler in technique and more rapidly performed. Subsequent experiments have shown it to be absolutely effective in preventing leakage.

The operation is as follows: A very short incision is made on the left side, parallel to and about an inch below the free border of the ribs; the stomach is seized and drawn through the incision until it forms a cone from an inch to an inch and a half in height, the base, of course, next the skin. The circumference of the base of this cone is then attached to the abdominal wall by either continuous or interrupted sutures, including, of course, the peritoneum. The cone is then inverted, so that its apex protrudes into the stomach. If the case is urgent, the apex can be pierced at once and a tube introduced surrounded by protective gauze, otherwise the cavity of the inverted cone may be filled with gauze and the opening made later. The whole operation is so simple that it need not occupy more than five or six minutes, and in urgent cases could be done, with the aid of a few minims of cocaine solution, without general anæsthesia.

Imperial Granum.

This standard prepared food for invalids and children has won the enviable distinction of having successfully stood the crucial test of years of actual clinical experience in private practice, sanitariums and hospitals, while numerous competing preparations have appeared and disappeared—often so completely that even their names are forgotten. The Imperial Granum, however, enjoys so universally the confidence of physicians that its merits are beyond dispute. Moreover, the decision of its manufacturers not to publicly advertise it has secured for it the endorsement of even the most ethical members of the medical profession, who dislike to prescribe any article advertised broadcast to the people and profession alike. Physicians can obtain sample packages free, charges prepaid, on application to the Imperial Granum Co., New Haven, Ct., or John Carle & Sons, New York city.

Book Notices.

Clinical, Pathological and Experimental Study of Fracture of the Lower End of the Radius, with Displacement of the Carpal Fragment Toward the Flexor or Anterior Surface of the Wrist. By JOHN B. ROBERTS, A. M., M. D., Professor of Anatomy and Surgery at Philadelphia Polyclinic, etc. *With Thirty-Three Illustrations.* Philadelphia: P. Blakiston, Son & Co. 1897. Cloth. 8vo. Pp. 76. Price, $1.

This monograph is a perfect work for one who has the time to steadily read it through. But how few practitioners have the disposition even if they have the time to do such reading? Hence every book of a scientific character should have an index. The best of books often lose their value for lack of such tables of reference. The monograph before us is one of that kind. To read it now and then to wish to refer to it hastily months later renders it almost useless to the busy practitioner. We wish we could impress upon authors of works the importance of thoroughly indexing their publications. As it is, this monograph opens with a record of cases and specimens. The author has seen no case immediately after the receipt of injury by which forward displacement of the carpal fragments had taken place, but on four occasions—once while the monograph was in press—"he has seen old fractures which seemed to have been injuries of this kind." His book, therefore, is based upon cases recorded by others and accounts of cases occurring in the practice of correspondents. No doubt, he thinks, the injury would be as common as Colles' fracture were parties as apt to fall on the back of the wrist as on the palmar aspect. Some experimental observations

were made under the directions of the author on dead subjects or amputated limbs, which, however, are by no means, conclusive as to the exact character of injuries essential to the production of this special fracture and dislocation. Symptomatology and points of diagnosis are well brought out; but it would have been a more satisfactory form of statement if something like tables of the chief signs and symptoms had been made. Treatment seems simple enough—immediate and complete reduction of the fracture, followed by a retentive dressing, which will not interfere with the free use of the fingers. The surgeon should grasp the metacarpus while the patient's hand is supine, while the other hand of the surgeon should grasp the patient's forearm. Let the thumb of the surgeon's hand which holds the metacarpus be placed on the palmar surface of the carpal fragment of the radius as it lies just behind the thenar eminence. Make extension and counter-extension for a moment; then suddenly bend the hand backward in strong dorsal flexion, while the surgeon's thumb pushes the lower fragment backward into place. While this is painful, it does not usually require an anæsthetic, as the whole manœuvre, as a rule, can be so quickly done. Of course it is more difficult aud more painful to reduce an old fracture and dislocation.

Clinical Lessons on Nervous Diseases. By S. WEIR MITCHELL, M. D., LL. D., Edin., Member of National Academy of Sciences, etc. Lea Brothers & Co. Philadelphia and New York. 1897. Large 12mo. Pp. 305. Cloth.

While every page of this book is instructive as well as interesting, it is practically impossible to point out its many excellences without reprinting the work. While nominally it deals with many common place disorders of the nervous system, it yet selects the curious and unusual cases of such diseases for description. Among these cases are records of some cases of *erythromelalgia* or "red neuralgia." It differs from Raynaud's disease (or local asphyxia) in that *erythromelalgia* is a chronic disease "in which a part or parts—usually one or more extremities—suffer with pain, flushing and local fever, made far worse if the parts hang down." Some cases exhibit all the symptoms to such a degree "as to make the disease one of terrible torment." Possibly it is a form "of that new clinical perplexity, peripheral neuritis." Raynaud's disease, on the other hand, manifests itself by the cold, white skin, with pale extremities, free from pain of any moment, and more or less anæsthetic, and now presently livid. It is unaffected by seasons, or attacks can be brought on by cold; there is anæsthesia to touch, analgesia, etc.; whereas *erythromelalgia* is eased by cold, sensations of all kinds are preserved, and there is hyperalgesia Dr. Mitchell first described this latter malady in 1872; since then Lannois in France, Gerhardt in Germany, etc, have recorded many cases. One of the cases of "hysterical contractures" is likewise interesting if puzzling. This patient uses the pen in her mouth, and writes well. Chapter XVIII, on Rotary Movements in the Feeble-Minded, gives some very unusual cases—one in which a girl would turn around rapidly on one heel for 20 to 30 minutes, and yet without vertigo afterwards. The principles of the "rest cure" are carried out in the treatment of most cases. We have merely referred to two or three points in the book, not as a synopsis of its contents, but simply to indicate its general interest to practitioners, and its all-important value to those who pay anything like special attention to neurology. The book is neatly gotten up, well indexed, and the eminence of the author will make it an authoritative work.

Hemorrhoids and Other Non-Malignant Rectal Diseases. *Diagnosis and Treatment.* By W. P. AGNEW, M. D. *Third Edition.* Pacific Press Publishing Co., San Francisco. 1896. Cloth. 8vo. Pp. 214. By mail, $2.75.

The popularity of this book, shown by the fact that this is the third edition of a comparatively recent first issue, consists in the circumstance that it recommends in general milder procedures for the relief of hemorrhoids and other non-malignant rectal diseases than painful radical operations. The recommendations, too, seem to be based upon ample experience of the author and hosts of other general practitioners. While Allingham, Mathews, Kelsey, Andrews. etc., have "uttered their pronunciamento in favor of their choice of operations, and against other methods," it should not be forgotten that "people of the present time are not given to echo the sentiments of a master," unless the directions of the master can be submitted to test and proven to be true; but with reference to piles especially, it seems that "a full appreciation of the superiority, the simplicity, the safety and the certainty of the treatment by carbolic acid injection," should commend this method as a truly scientific method. The author quotes from the experience of numerous practitioners to show that carbolic acid injections are greatly in advance of radical surgical operations intended for the

cure of piles. Especially does he quote from the article in the *International Journal of Surgery*, by Dr. J. W. Hallsen, wherein it states: "For the last ten years, this plan of treatment [by carbolic acid hypodermic injections] has never produced any alarming symptoms, no secondary hemorrhage and no sloughing other than the pile itself. By it I have yet to report my first failure. By this method, Dr. E. J. Denis, of Kansas City; Fred. R. Boyd, of St. Joseph, Mo.; Q. A. Shuford, of Tyler, Texas; W. L. Rodman, of University of Kentucky, *have cured hundreds;* while Dr. W. P. Agnew, of San Francisco; Kelly, of Cincinnati; Ives and Davis, of Chicago; Monroe, of Louisville, and E. F. Hoyt, of New York, have each cured thousands of cases." We confess that the mass of evidence brought forward has shaken our confidence in radical operations for piles, and inclined us to a more willing consent to or recommendation of carbolic acid injections. There is nothing quackish about the book. Descriptions are fully and simply given, and formulæ are detailed which have done the good. This is a book for the *general practitioner*. It would fully repay him.

Syringomyelia. By GUY HINSDALE, A. M., M. D., Assistant Physician to the Orthopedic Hospital and Infirmary for Nervous Diseases, Philadelphia; Attending Physician to the Presbyterian Orphanage and to the Out-Patient Department of the Pennsylvania Hospital in Philadelphia, etc. P. Blakiston, Son & Co. Philadelphia. 1897. Large 8vo. Pp. 74. Cloth, $1.

This is "an essay to which was awarded the Alvarenga Prize of the College of Physicians of Philadelphia for the year 1895." It is based on a study of the analyses of 118 cases of the disease published since 1890. The essay ran through the November, December, 1896, and January, 1897, numbers of the *International Medical Magazine*, and synopses of or notes on the paper have occurred in various prints. The Bibliography covers twelve closely printed pages, and contains 514 references—being the most complete bibliography anywhere collected. The Prize was evidently deserved, for we cannot see how the essay could have been made much more perfect, with the record of cases in hand. Now that the pathology of the disease, its symptoms and its diagnostic points, have been so clearly pointed out, there can be no doubt but that many cases will be recognized in practice. Up to the present time, unfortunately, nothing in therapeutics has been suggested to prevent or to repair the pathological formation of the cavities in the spinal cord, or to arrest the trophic disorders which result—whether due to the cellular changes in the cord or not. If something could be discovered to prevent the development of the vascular tumors or "gliomes telangiectasiques," in the spinal cord and their softening, and the absorption of the degenerated structure which result in the formation of cavities in the spinal cord, we would make an advance that would place syringomyelia among the preventable or curable diseases.

Warner's Pocket Medical Dictionary of To-Day. By WILLIAM R. WARNER. Copyright: William R. Warner & Co., Philadelphia. 1897. Large 16mo. Pp. 338 Cloth.

This book contains 304 pages of dictionary material and 34 of advertisements of the publishers. The dictionary part comprises the "pronunciation and definition of 10,000 essential words and terms used in medicine and associated sciences." The preface claims that "Diphthongs have been omitted except in instances when the plural of a word is intended," and yet we find "anæmia," uræmic," "œdema," etc. The definition given to some of the words is misleading. Thus, "abscess" is defined to be "a *circular* pus cavity"; "ice" is defined simply as "congealed water," without the slightest reference to the temperature necessary for its production. In purposely omitting many very common medical words and terms, "because their definitions are so well known as to obviate the necessity of their classification," it seems to us that space might have been saved by omitting such terms as the "abdomen," "ache," "adhesive," "age," etc. But with such imperfections, it is a useful book from which to get an idea as to the meaning and pronunciation of most of the words. The print is good, and the typographical errors are few and far between.

Annual Report of the Supervising Surgeon-General of the Marine Hospital Service of the United States for the Fiscal Year 1897.

This Report covers 1,079 octavo pages; most of it is of interest to doctors. Among other cases of special interest noted and pictured was the report of a case of a kidney with double ureters. A great value of this book is that after a careful record is made of every sign and symptom manifested in a given case, then comes the detail of the autopsy. Surgeons and Assistant Surgeons in the Service also contribute cases of interest. Such a book as this ought to be kept in the medical library of every community—filled as it is with reports and statistics that cannot be gotten elsewhere.

Editorial.

Four-Year Medical Course in Colleges.

The Southern College Association, during its recent session in Nashville, declined, as we are advised, to require more than the usual three-year medical course. We confess to a little surprise at this action, since it has been shown by the colleges that require it that they have lost nothing by so doing. The University of Michigan, we believe, was the first institution in America (in 1890) to require such a course; and at the same time, the requirements for admission as a student in the medical department were increased so as to be equivalent to the preparation represented by a diploma from the classical or Latin course of a first class high school. And yet we are advised by Dr. Victor C. Vaughan (*Intercol. Med. Jour.*, March, 1897,) that "the number of students in attendance each year has gradually increased, until now the number is greater by one hundred than the maximum number during the seven years immediately preceding the establishment of the four-years' course." It should be stated, furthermore, that the college year extends through nine months, and is divided into semesters of four and a half months each.

In the same paper, Dr. Vaughan makes a few statements of general interest concerning the arrangement of the subjects in the four-years' course.

"The course, as we now have it, is a product of evolution, and we think that it is admirably adapted to the needs of the student. The first two years are filled with scientific studies and laboratory work. The *freshman class* has lectures during the morning upon osteology, general anatomy, general chemistry, qualitative analysis, physics, organic chemistry, and histology. Lectures on some of these subjects extend through the entire year, while those upon other subjects are carried through only one semester. * * * The afternoons are given to laboratory work. The freshman class is divided for laboratory purposes into three sections. *Section I.* works for three months, four hours a day, six days in the week, in the bacteriological laboratory. On the opening of school after the Christmas recess, the section works for the same time in the chemical laboratory. At the time when *Section I.* is doing its bacteriological laboratory work, *Section II.* is in the chemical laboratory, and *Section III.* is in the anatomical laboratory. Every working afternoon of the year is provided for. Indeed, if there is any criticism upon the course, it lies in the fact that the student who, from any reason, loses a week of this work, falls hopelessly behind the class. In chemistry, the student becomes familiar with the physical and chemical properties of the various compounds employed in medicine. He learns something of their solubility and of their general reactions. In anatomy, he has instruction, first, in osteology. Each bone of the body is studied in all its details and relations, an ample osteological collection permitting every student to become practically familiar with all parts of the human skeleton. After this, he enters upon a course of dissection, in which he must carefully and intelligently, under the direction of a demonstrator, dissect every part of the body, studying the origin, insertion and action of the various muscles, the course and distribution of the blood-vessels and nerves, and the size, shape, position and structure of the visceral organs. In bacteriology, he begins his work with the preparation of culture media of all kinds. Special stress is laid upon the fact that each student must prepare his own culture media. Having done this, he takes up the non-pathogenic germs and becomes familiar with the methods of detection, isolation and identification. After learning how to handle micro-organisms, he enters upon his study of the pathogenic bacteria. These are grown upon all the various culture media, such as gelatin, agar, potato, etc. Animals are inoculated, the effects observed, post-mortem examinations made, and the germ isolated from the animal and identified. Samples of tuberculous sputum are stained for the bacilli, diphtheritic membranes are examined, typhoid stools from the hospital are searched for the typhoid germ, and tetanus and other pathogenic germs, obtained from animals, experimented upon.

"This division into three sections continues during the *second* year. The individual student spends three months in physiological chemistry, three months of additional study in anatomy, six weeks in histology, and six weeks in electro-therapeutics. The instruction in physiological chemistry includes a study of the digestive juices, the chemistry of the bile, a study of the blood and of the urine. Both qualitative and quantitative examinations of milk are also made. Pathological urines and the contents of diseased stomachs are obtained and submitted to the student for examination, under the direction of competent instructors. The course in histology embraces a study of the microscopical structure

of the normal tissues of the body, including that of the pre-natal development of various parts and organs. In electro-therapeutics, the students are furnished materials from which they construct batteries, induction coils, cautery knives, electrodes, and other appliances, and with these experiments in electro-physics, electro-physiology and electro-therapeutics are conducted.

"The lecture course of the *second year* includes regional anatomy, anatomy of the nervous system, physiology, hygiene, embryology and physiological chemistry.

"A very important line of instruction has been introduced into the *third year*. This consists of demonstration courses in surgery, ophthalmology, obstetrics, physical diagnosis, and the study of nervous diseases. There is a surgical laboratory, in which the student, after taking instruction in bandaging and other procedures generally given in a course on minor surgery, makes operations upon dogs. These operations include amputations, laparotomies, etc., in which every attention to detail in antisepsis, asepsis, dressing, etc., is given. There are also operations upon cadavers. In the demonstration course in obstetrics, with proper manikins and models, the student is taught what to do in various presentations and emergencies which may occur in obstetrical practice. A similar line of study is followed in the other demonstration courses. These demonstration courses cover two hours of each afternoon of the third year, the remainder of the afternoon being spent by the third-year student in attendance upon clinics. The laboratory course in pathology is also given during the third year. The location of the course in pathology in the third year is found to be most beneficial, inasmuch as the student is at this time attending clinics and often seeing patients who are afterwards brought to the post-mortem table, and upon whom part of his pathological studies may be based. There is also in the third year a laboratory course in pharmacology. In this course, certain important drugs are used experimentally upon animals, and the student is taught to record the effects of the drug upon various organs. During the third year the student attends lectures upon theory and practice of medicine, general surgery, obstetrics, materia medica and therapeutics, and pathological histology.

"The afternoons of the *fourth year* are given entirely to hospital work. The students go to the hospital directly after luncheon and spend the remainder of the afternoon in that building. Clinical instruction is given not only in the amphitheatre, but at the bedside as well. The hospital is truly a teaching institution. Every patient who enters the hospital can be utilized to the fullest extent in the instruction of students. Patients have already learned that this does not in any way interfere with their recovery. Indeed, I believe it is now a generally recognized fact that teaching hospitals are the best places for patients. The professors in charge try to keep everything in a model condition in order that the hospital itself may serve as a lesson of instruction to the students. Clinics are given in internal medicine, in nervous diseases, in surgery, in obstetrics and gynæcology, in ophthalmology, otology, laryngology, dermatology and syphilology.

"The lectures and recitations of the *fourth year* include instruction in theory and practice, special surgery, obstetrics and gynæcology, diseases of the nervous system, dermatology and syphilology, ophthalmology, otology, laryngology, and medical jurisprudence.

"In addition to these, the student may take optional work in advanced lines in any of these branches. There are also optional courses in water analysis, food analysis, toxicology, etc. The professors who are engaged in research work give special courses in the lines of investigation that they are following at the time. These are proving to be of great interest and benefit to the student."

New Professors in Medical College of Virginia.

During the meeting of the Board of Visitors, May 27, the chair of Histology, Pathology, and Bacteriolology was filled by the election of Dr. Ernest C. Levy as Professor. Dr. Robert F. Williams, also of Richmond, was elected Professor of Materia Medica, Therapeutics, and Organic Chemistry. The Faculty was authorized to appoint an acting Professor of Diseases of the Eye, Ear, and Throat for the next session. A chair of Operative, Prosthetic, and Clinical Dentistry was established, and Dr. Henry C. Jones, of Richmond, was chosen Professor. A chair of Pharmacy was also established, and Mr. Frank M. Reade was elected Professor. A three-years' course, and *not a four-years' course* was decided on for the next session.

University College of Medicine, Richmond, Va., New Building.

As we go to press, every arrangement has been made to begin work at once on the new building of this college to be in readiness by October 1, 1897.

Notes Regarding the Meeting of the Ameri an Medical Association at Philadelphia.

The semi-centennial meeting of the American Medical Association will take place at Philadelphia on Tuesday, Wednesday, Thursday and Friday, June 1st to 4th. The general meeting will be opened on Tuesday by the introduction of the venerable Dr. Nathan S. Davis, of Chicago, attended by the Presidents of the State Medical Societies, and he will deliver an address entitled "A Brief History of the Origin of the American Medical Association, the Principles on which it was Organized, the Objects it was Designed to Accomplish, and How Far they Have Been Attained During the Half-Century of its Existence." The President of the Association is Dr. Nicholas Senn, of Chicago, and the First Vice-President Surgeon-General Geo. M. Sternberg.

It is expected that nearly 3,000 delegates will attend this memorable meeting, and the profession of Philadelphia has made great preparations for their reception, not only from a social, but even more particularly, from a scientific standpoint. Arrangements have been made for special courses at the various colleges so that delegates may, however briefly, become acquainted with recent medical processes. The committee in charge has found it possible to arrange for the general and sectional meetings to take place in the buildings situated within a single block on Broad street—*i. e.*, that block extending from Locust street to Spruce street. At the southeast corner of Broad and Locust streets is situated the Hotel Walton, which will be the headquarters of the Association, and in which three of the sections will meet. Immediately adjoining it to the south is the Broad Street Theatre, with a large seating capacity, which will be devoted to the Section of Practice of Medicine. Adjoining it to the south is the Hotel Stenton, in which the meetings of the Section of Physiology and Dietetics will be held. Immediately opposite, at the northwest corner of Broad and Spruce streets, is the Beth-Eden church, which, in addition to its ordinary accommodations, contains a large meeting-room. This building will be used by the Sections of Obstetrics and Gynecology, and of Neurology and Medical Jurisprudence. Immediately across from the Broad Street Theatre is Horticultural Hall, a newly erected building, exceedingly handsome in its inside and outside decoration, the main hall of which will be devoted to exhibition purposes. This hall also contains two large meeting-rooms, which will be devoted to the Sections of Surgery and Anatomy and of Dermatology and Syphilography. Finally, the Academy of Music, immediately adjoining Horticultural Hall, and which is capable of seating nearly 3,000 persons, has been engaged for the general meeting. Smaller rooms in the same building will be used for the Sections of Diseases of Children, of Materia Medica and Pharmacy and of State Medicine.

These places of meeting are also situated close to the College of Physicians, at the corner of Locust and Thirteenth streets, an institution which has the largest medical library in the United States, next to that of the Surgeon-General's Office at Washington. Most of the important clubs are also within a few hundred yards of the hotel headquarters. It will also be noticed that the meeting places are but three blocks away from the Broad Street Station of the Pennsylvania railroad and but four blocks from the Terminal Station of the Reading railroad.

Several luncheons will be given each day under various auspices. The dinners of the various Sections will take place on Tuesday evening at 7 o'clock, and on Wednesday evening the University of Pennsylvania, the Union League Club, Jefferson Medical College, the Academy of Fine Arts, and other institutions, will hold receptions. On Thursday evening, the Provost of the University of Pennsylvania, Mr. C. C. Harrison, will receive the delegates on the campus of the University, and several private lunches will also be given on the same day. The publishers of the *Medical News*, Messrs. Lea Brothers & Co., have invited the visiting delegates and their wives to a theatre-party on Thursday evening, at the Broad Street Theatre, at which refreshments will be served. On Friday the Philadelphia Medical Club will give a luncheon at the Hotel Aldine, and on that afternoon the meeting will come to a close. —*Med. News*, May 22.

Messrs. E. B Treat & Co.

Have removed to Broadway to more commodious quarters in the new building, Nos. 241 and 243 West Twenty-third street (near Seventh avenue), New York. Mr. Treat has admitted his two sons, William H. and Edwin C., who have been with him several years, to partnership interests. The firm has in press several new publications for early issues—among them an atlas and text book, *Illustrated Skin Diseases*, by Dr. W. S. Gothler, New York, profusely illustrated by the new color photography process, and black and white illustrations from life, to appear in 13 portfolios; each $1.

The Faculty of the New York University, Bellevue Medical School.

The work of arranging the Faculty and various teachers of this great consolidated medical school was one of much delicacy. It was unanimously agreed that the University corporation should elect the new Faculty, and in order that there might be as little embarrassment as possible the members of the old ones all tendered their resignations. The corporation then furnished blanks to the professors, and asked them to nominate men whom they considered most competent to fill the different chairs, and it is stated that the corporation selected nine-tenths of those who were thus recommended. While there were twenty professorships in the former medical department of the University, there are now forty-one in the new consolidated school.

The following is a list of those elected:

Professors—Medical Ethics, Dr. John P. Munn; Pathology, Dr. J. G. Adami; Public Medicine and Infectious Diseases, Dr. Hermann M. Biggs (Bellevue); Applied Anatomy and Clinical Surgery, Dr. Joseph D. Bryant (Belv.); Physiology, Dr. Austin Flint (Belv.); Practical Anatomy, Dr. Irving S. Haynes (University); Materia Medica and Therapeutics, Dr. Henry P. Loomis (Univ.); Obstetrics, Dr. William T. Lusk (Belv.); Gynecology, Dr. Wm. M. Polk (Univ.); Theory and Practice of Medicine, Drs. A. Alexander Smith (Belv.) and W. Gilman Thompson (Univ.); Surgery, Dr. Lewis A. Stimson (Univ.); Chemistry, Physics and Toxicology, Dr. Rudolph A. Witthaus (Univ.); Anatomy, Dr. George Woolsey (Univ.).

Emeritus Professors—Chemistry, Dr. R. Ogden Doremus (Belv.); Medical Jurisprudence and Psychological Medicine, Dr. Alexander E. Macdonald (Univ.); Otology, Dr. Chas. L. Pardee (Univ.); Orthopedic Surgery, Dr. Louis A. Sayre (Belv.); Materia Medica and Therapeutics, Dr. Wm. H. Thomas (Univ.); Dermatology, Dr. Henry G. Piffard.

Adjunct and Assistant Professors—Obstetrics, Dr. J. Clifton Edgar (Univ.); Practical Anatomy, Dr. John F. Erdmann (Belv.); Surgery, Dr. Frederick W. Gwyer (Univ.); Medicine, Dr. Egbert LeFevre (Univ.); Chemistry, Dr. J. A. Mandel (Belv.); Anatomy, Dr. George D. Stewart (Belv.); Chemistry and Physics, Dr. Ivan Sickles (Univ.)

Clinical and Special Professors—Otology, Drs. Edward B. Dench (Belv.), and Gorham Bacon; Diseases of the Nose and Throat, Drs. F. H. Bosworth (Belv.), and Cornelius G. Coakley (Univ.); Ophthalmology, Drs. Charles S. Bull (Univ.), and Henry D. Noyes (Belv.); Surgery, Dr. Frederic S. Dennis (Belv.); Diseases of the Nervous System, Dr. Edward D. Fisher (Univ.); Genito-Urinary Diseases, Drs. Samuel Alexander (Belv.), and P. A. Morrow (Univ.); Midwifery, Dr. Austin Flint, Jr. (Belv.); Dermatology, Dr. John A. Fordyce (Belv.); Mental Diseases Dr. Carlos F. MacDonald (Belv.); Diseases of Children, Drs. Wm. P. Northrup (Belv.), and Joseph E. Winters (Univ.); Medicine, Drs. Beverley Robinson (Belv.), and Chas. E. Quimby; Lecturer on Orthopedic Surgery, Dr. Reginald H. Sayre.

In the above list there appears the names of but two who did not formerly occupy positions in either Bellevue or the University Medical School, namely, Drs. John P. Munn and J. G. Adami. Dr. Munn is the only member of the Faculty who is also a member of the Council of the University. Dr. Adami is now Professor of Pathology in McGill University, Montreal, and has an international reputation. He is a graduate of Cambridge University, where he formerly held an assistant professorship. It is also announced that Dr. Edward G. Janeway, who preceded the late Dr. Austin Flint in the Chair of Practice of Medicine in the Bellevue Hospital Medical College, but resigned the position some years ago, will be one of the professors in the new Faculty, and will give a special course of lectures upon some topic not yet fully determined upon. The chairs of histology and bacteriology have not been filled, and no appointments to them will be made until Dr. Adami's arrival in New York. Dr. Munn is to be Dean, and Dr. Egbert LeFevre Secretary of the Faculty. Up to the present time, Dr. W. T. Lusk has been President and Dr. Austin Flint Secretary of the Bellevue School, and Dr. C. I. Pardee Dean of the University Medical School.—*Boston Med. and Surg. Jour.*, May 20.

Influenza and Diphtheria

Seem again to threaten almost epidemic proportions. Our foreign exchanges are filled with reports of cases. The London correspondent of *Medical Record*, writing on April 30th, states that these diseases are on the increase in London. In the preceding four weeks there were registered respectively, 28, 34, 22 and 37 fatal cases of *influenza*. During the last week in April the deaths from *diphtheria* rose to 40—being ten above the average for that week in the last decade. During the week ending May 15th, there were reported to the Sanitary Bureau of New York city, 281 cases of *diphtheria*, and 37 deaths; also 10 cases of laryngeal diphtheria (croup), with a mortality of 100 per cent.

Societies, etc., to Meet in June, 1897.

American Medical Association, Philadelphia, June 1–4. Dr. Nicholas Senn, Chicago, President; Dr. Wm. B. Atkinson, 1400 Pine St., Philadelphia, Secretary.

American Medical Publishers' Association, Philadelphia, Hanover Hotel, May 31–June 1. Dr. Landon B. Edwards, Richmond, Va., President; Mr. Chas. Wood Fassett, St. Joseph, Mo., Secretary.

Maine Medical Association, Portland, June 2–4. Dr. D. A. Robinson, Bangor, President; Dr. Chas. D. Smith, 126 Free St., Portland, Secretary.

Rhode Island Medical Society, Providence, June 3. Dr. Elisha P. Clark, Hope Valley, President; Dr. Frank L. Day, Providence, Secretary.

Massachusetts Medical Society, Boston, June 8–9. Dr. Henry P. Walcott, Cambridge, President; Dr. F. W. Goss, Roxbury, Secretary.

North Carolina, Medical Society of State of, Morehead City, June 8–10. Dr. P. L. Murphy, Morganton, President; Dr. R. D. Jewett, Wilmington, Secretary.

Oregon State Medical Society, Portland, June 8–9. Dr. Andrew C. Smith, Portland, President; Dr. Wm. F. Amos, Portland, Secretary.

South Dakota State Medical Society, Mitchell, June 9. Dr. Wm. Edwards, Bowdie, President; Dr. W. J. Maytune, Alexandria, Secretary.

Minnesota State Medical Society, Mankota, June 16–18. Dr. W. D. Flinn, Redwood Falls, President; Dr. Ignatius Donnelly, St. Paul, Secretary.

New Jersey, Medical Society of., Atlantic City, June 22. Dr. T. J. Smith, President; Dr. Wm. Pierson, Orange, Secretary.

West Virginia, Medical Society of, Charleston, June —. Dr. N. D. Baker, Martinsburg, President; Dr. G. A. Aschman, Wheeling, Secretary.

Secretaryship of the American Medical Association.

Dr. William B. Atkinson has filled this position for years, with credit and honor. There is a disturbing and a disgusting element somewhere in the profession that seems intent upon dislodging this faithful officer, whose position should be practically made a permanent one. It is to be hoped that "the young men who were unheard of and undreamed of when Dr. Atkinson first took up the cares of the office which he fills with so much honor to the Association" will have respect enough for common professional wish as also for themselves not to throw bombs into the Association ranks —so imitative of the practices of assassins. Dr. Atkinson is a faithful, honest officer, whose usefulness should not be interfered with by evil designers and intriguers against his fair record.

State Medical Examiners' Boards Meeting in June, 1897.

North Carolina, at Morehead City, June 7–9.

Virginia, Richmond, June 21–24. Dr. Rawley W. Martin, Lynchburg, President; Dr. R. S. Martin, Stuart, Secretary.

In neither of these States can applicants for practice secure license to practice until he or she has passed a satisfactory examination before the State Board of Examiners of the respective States.

Kentucky State Medical Society.

The 42d annual meeting, held a fortnight ago in Owensboro, seems to have been a great success. Its next annual meeting will begin the third Wednesday in May, 1898, in Maysville. Officers elect for current year are, *President*, Dr. Joseph M. Mathews, Louisville; *Vice-Presidents*, Drs. W. W. Richmond, Clinton, and B. W. Smock, Oakland; *Permanent Secretary*, Dr. Steele Bailey, of Stanford; *Treasurer*, Dr. J. B. Kinnaird, Lancaster.

Obituary Record.

Dr. J. Mack Hays

Was found dead May 15, 1897, at his home in Greenboro, N. C. He had recently returned from Western N. C. Hospital. His death is attributed to an overdose of morphine, self-administered. He was born in Oxford, Greenville Co., N. C., about 40 years ago. He received his medical degree from the Medical College of South Carolina, and joined the North Carolina State Medical Society in 1885. For three years he was its Secretary. In 1894 he was elected a member of the N. C. State Board of Medical Examiners, which position he held until his death. He practised for some years in Oxford, N. C. Then, for a short while, he practised in Washington, D. C., where he had the honor of being second in authority in Dr. Wm. A. Hammond's Sanitarium. Later he took a special course in diseases of the eye, and after his removal to Greensboro devoted much of his time to this specialty of practice—*N. C. Med. Jour.*, May 20.

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Original Communications.

INCREASE OF INSANITY AND CONSUMPTION AMONG THE NEGRO POPULATION OF THE SOUTH SINCE THE WAR.*

By THOMAS J. MAYS, A. M., M. D., Philadelphia, Pa.,

Professor of Diseases of the Chest in the Philadelphia Polyclinic, and Visiting Physician to the Rush Hospital for Consumtives in Philadelphia.

During the last ten or fifteen years there appeared various contributions on the disproportionate increase of insanity and consumption among the negro population of the South since the close of the civil war. This literature† emanates from the best minds in the medical profession of the South; and believing that it pertains to a question which is of the most vital concern to social science, and also believing that it will enlist the attention of every student who is interested in the physiology of man's development and in the prevention and cure of these two diseases, I have seen proper to bring it before this meeting for a full and free discussion. I feel that such a consideration of the facts and figures which are here presented will serve to set into a new light the mechanism of at least some of the most powerful factors which are engaged in the production and perpetuation of two of the most deadly enemies of mankind.

In speaking of the increase of insanity in the colored population of Georgia, Dr. Powell, Superintendent of Georgia Lunatic Asylum, makes the following comments: "There has been a radical change in the susceptibility to certain diseases, notably insanity, phthisis and similar maladies, in this class of our population, from which they were almost entirely exempt up to 1867." * * * "The census of 1860," quoting further from the same author, "will show that there were only forty-four insane negroes in the State of Georgia, or one insane negro in every 10,584 of population, and consumption in the full-blooded negro was rarely seen. The census of 1870 shows 129 insane negroes in this State, or one to every 4,225. The census of 1880 gives 411 colored insane, or one to every 1,764 of population. The census of 1890 gives 910 colored insane, or one to every 943 of population."

Dr. J. F. Miller, Superintendent of the Eastern Hospital of North Carolina for colored insane, says: "From close personal observation, embracing a professional life of nearly forty years among the negroes, and from data obtained from professional brethren in different sections of the South, I have no hesitancy in declaring that insanity and tuberculosis were rare diseases among the negroes of the South prior to emancipation." The Eastern Hospital of North Carolina was opened for the exclusive accommodation of the colored insane August 1, 1880, and Dr. Miller furthermore states that, during the first year, there were admitted ninety-one insane negroes, which number represents the accumulation of this class of patients in that State during the first decade and a half after the civil war. In 1885, there were under treatment one hundred and forty-four; in 1890, two hundred and forty-four; in 1895, three hundred and seven, and in December, 1896, three hundred and seventy-seven insane negroes.

Dr. J. W. Babcock, Superintendent of South

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* Read before the Section of Neurology and Medical Jurisprudence of the American Medical Association, at the Philadelphia meeting, June 3, 1897.

† Report on the *Increase of Insanity and its Supposed Causes*, by Dr. T. O. Powell, Superintendent of the Lunatic Asylum of the State of Georgia, October 1, 1886.

Tuberculosis in Asylums, by Dr. J. W. Babcock, Superintendent of State Hospital for the Insane, Columbia, S. C., published in *American Journal of Insanity*, October, 1894.

The Increase of Insanity and Tuberculosis in the Southern Negro since 1860. Their Alliance and Supposed Causes. By Dr. T. O. Powell, Superintendent of the Georgia Lunatic Asylum, November 21st, 1895.

The Effects of Emancipation upon the Mental and Physical Health of the Negro of the South. By Dr. J. F. Miller, Superintendent of Eastern Hospital, Goldsboro, N. C., published in *North Carolina Medical Journal*, November 20, 1896.

Private correspondence.

Carolina Insane Asylum, says: "We cannot lose sight of the fact that, on the basis of the census as compared with insanity in the whites, mental disease in the negro has arisen from one-fifth, as common in 1850, to one-half, as common in 1880 and 1890."

Dr. Miller also states that, in the hospital in his charge, the average mortality from consumption, since its opening to 1896, is twenty-five per cent. of the total number of deaths. However, the death rate from this disease was much less in its early management. Thus, up to 1884, it caused fourteen per cent. of the total number of deaths, while in 1895 it produced twenty-seven per cent. of all the deaths, and this in spite of a reduction of the general mortality rate.

Dr. Powell (*op. cit.*) says: "From observation and investigation, I am forced to believe that insanity and tuberculosis are first cousins, or at least closely allied. The sudden outburst of insanity with the colored race of the South came associated with tuberculosis, hand in hand, keeping pace one with the other; hence, in obtaining histories of cases as they are brought to our institution, the hereditary predisposition to consumption is carefully inquired into. The prognosis of phthisical insanity is unfavorable. I am not surprised at any time to find insanity in a family strongly predisposed to phthisis, and phthisis in a family strongly predisposed to insanity."

Dr. T. J. Mitchell, Superintendent of the Mississippi Lunatic Asylum (cited from Dr. Miller's able paper), states that, among the negro patients of his institution, the following number of deaths occurred in the years named: In 1892, there were forty-four deaths, and fourteen of these, or about 32 per cent., were caused by consumption. In 1893, there were twenty-nine deaths, and sixteen of these, or about 55 per cent., were caused by consumption. In 1894, there were forty deaths, and eighteen of these, or 45 per cent., were caused by consumption. In 1895, there were thirty-five deaths, and eleven of these, or about 31 per cent., were caused by consumption. In ten months of the fiscal year of 1896, there were forty-eight deaths, and twenty-three of these, or about 48 per cent., were caused by consumption. These data show that about 42 per cent. of the whole number of deaths in this institution were caused by consumption during the years mentioned, and estimating the death rate among the white population from this disease at 20 per cent., the death rate among the insane negro is 22 per cent. greater.

Dr. E. D. Bondurant, Assistant Superintendent of Alabama Insane Hospital (cited according to Dr. Miller), says: "During three years and nine months, beginning October 1, 1890, 295 deaths occurred among the 1,700 patients treated at this Hospital. Of the 179 deaths among white patients, 51, or 28 per cent., were due to tuberculosis; of 116 deaths among negro patients, 49, or 42 per cent., were due to tuberculosis. In addition to this, a study of our clinical records discovers the fact that in the colored race the disease assumes a much more active and rapidly progressive form, the average duration of fatal cases being markedly shorter in the negro."

Dr. W. B. Barnes, First Assistant Physician in Arkansas Lunatic Asylum, states (private communication) that neither insanity nor pulmonary consumption were especially prevalent among the negroes while they were slaves.

Dr. R. J. Preston, Superintendent of Southwestern Hospital of Virginia, says (private communication) there has been a great increase in both insanity and phthisis among the negro population since emancipation.

Dr. Jas. D. Moncure, Superintendent of Eastern Hospital of Virginia, informs me (private communication) that the health of the negro, with regard to insanity and phthisis, was very much better before emancipation than since. Before that time there were about sixty insane negroes in the asylums of Virginia. Now (1896) there are over one thousand. In all hospitals the insane seem readily to contract tuberculosis, and this is a frequent cause of death among the insane.

From the foregoing, the following conclusions may be safely drawn:

(*a*) That insanity and consumption were comparatively infrequent in the negro race before the war.

(*b*) That both of these diseases have disproportionately increased in the same race since the war; and,

(*c*) That in all probability the causes which give rise to one of these diseases also produce the other.

Now, what is the cause for this rapid and remarkable transformation in the health of these people during the short period of three decades? Why should insanity and consumption develop side by side, and at an equal pace; and why should the former frequently precede the latter in the same individual? Are these diseases acquired through contagion, or are they due to other conditions and influences inherent in the changed environment of this race? These are questions which appeal to the very root and marrow of this matter, and until we solve

them we cannot hope to grapple successfully with either the cure or prevention of the diseases under consideration.

First, in regard to *contagion*. It is needless to say that even at present there is not a trace of well-grounded suspicion that insanity is acquired through contagion, and hence nothing need be said on that side of the subject.

In the next place, is there any evidence to show that *consumption's contagion was lying dormant* before the war, and that it sprang into sudden and most violent activity after the close of this period? So far as I know there is none, and aside of the untenability of such a position, Dr. Powell testifies (*op. cit.*) that the opportunity for contagion was most favorable before the war. "It should be remembered," he says, "that up to the war and during the war, the negroes were the principal nurses for the consumptives of the South. They washed the spittoons, bedding and clothing of the consumptives, swept and dusted their room, and in many instances slept in the room with them—literally living with them night and day, and were more exposed to the tubercle bacillus than now, as a general thing; still they resisted the disease."

I think the whole question of the origin of consumption will be solved the easiest if we study the causes which lead to both insanity and consumption together, for though on superficial inspection these two diseases have nothing in common, yet deeper study teaches us that the former is a perfect analogue of the latter. During the last ten years I have been engaged in collecting material—clinical, experimental and pathological—which demonstrates that pulmonary consumption is not primarily a disease of the lungs, but a secondary manifestation of impaired integrity of the nervous system in general, and of the pneumogastric nerves in particular. This view did not originate with me, for in 1842, Cheneau attributed this disease to disordered pneumogastric innervation. In 1850, Dr. J. C. Holland defined pulmonary consumption as a disease of the nervous system. In 1862, Dr. Laycock stated that defective pneumogastric innervation consequent upon a loss of cerebro spinal power, is a very common predisposing and exciting cause of phthisis Dr. Clifford Allbutt said in 1871, that "the more I study this, the more I am satisfied that the lung mischief is also a neurosis—by which I mean that the lesion is one not originating in the local tissues, but in the nervous system." In 1891, Dr. T. S. Clouston delivered a course of lectures, in which he stated that facts "seem to show that if tuberculosis cannot itself be called neurosis, it is in most cases dependent for its existence on a trophic neurosis, or has the closest affinity to it." There is also a richness of clinical material scattered throughout the literature of medicine which confirms the pathological view that phthisis is a neurotic disease. Thus, in my brochure* on "*Pulmonary Consumption—A Nervous Disease*, I collected and tabulated a large number of cases of phthisis in which the pneumogastric nerves were compressed by tumors, aneurisms, or otherwise disintegrated prior to the onset of the disease in the lungs.

In other papers† since published, I believe that I have succeeded in demonstrating the following propositions concerning the close affiliation that exists between insanity and pulmonary consumption: (1) that both of these diseases are most liable to occur at the same age-period—*i. e.*, between twenty and thirty years; (2) that the family which is burdened with one is also liable to produce the other—this liability being greater in the case of insanity than in that of phthisis; (3) that they are both closely related, in personal and in family history, to idiocy, hysteria, epilepsy, asthma and to other diseases of the brain and the spinal cord; (4) that they are both produced by syphilis, alcohol, overwork, business vicissitudes, domestic trouble, mental anxiety, grief, disappointment and excesses of all sorts—in fact, by any agent or influence, such as those named—which vitiate the brain or the nervous system; (5) that the insane, the idiotic, the epileptic, the hysterical, the asthmatic and the members of their families are from three to eight times more prone to become phthisical than persons who are not burdened in the same way; and (6) that those who are confronted by a new and a higher civilization, and who are compelled to adjust themselves to these new relations, are excessively liable to fall victims to pulmonary phthisis.

Let us now consider the question of increase of insanity and of pulmonary consumption among negroes, in the light of these deductions, and see what interpretation can be given to the origin of these diseases. And in the first place, we will discuss the effects on the nervous system which are wrought by a struggle between a higher and a lower civilization. At the very outset, it must be conceded that a struggle for existence, even under the most uniform and favorable conditions, is accompanied by con-

* Published by George S. Davis, Detroit, 1891.

† Pulmonary Phthisis in Relation to Insanity, etc., *Med. News*, July 16, 1892; Toxicosis of the Nervous System as a Cause of Consumption, *Journal of Mental and Nervous Diseases*, November, 1896.

siderable wear and tear of the body. What, then, is the result if a lower is precipitated into the midst of a higher civilization? Civilization is an accumulation of force, and the older and the higher the civilization the greater is its momentum. It is the meeting of two forces which differ in power and rate of motion. The higher civilization, backed by its many thousand years of organization and experience, can not, except to its own detriment, change its upward career, and hence the lower must, for the sake of self-preservation, adapt itself, so far as this is possible, to the course and changes of the higher movement, The effort of adjustment between the two may be compared to an animal which is confronted by a new geological era to which it must either adapt itself or forfeit its existence. The mandates which come from the changed geological environment to the animal are no less real and imperative than those which come to the negro from his changed surroundings. If we fully realize that the negro came out of the darkness of Egypt, and was brought face to face with a civilization with its education, knowledge and inventions; its advanced sanitation; its innumerable arts, sciences, and manufactures; its multiplicity of industries and employments; its burning life struggles; and its proneness to vices and excesses of all sorts, it cannot surprise any one that in many instances he is unequal to the task of adjusting himself to these, and falls a prey to disease. The point of greatest importance here is the fact that the brunt of the battle in this contest falls on and vitiates the brain and nervous system, since these structures are the instruments through which his efforts are chiefly made to bring himself in harmony with his changed relations. He, therefore, becomes insane and phthisical because his nervous system is undermined by and disintegrates under strains and burdens, which he is not able to resist or counteract.

In regard to the effects of a changed social environment on the negro, Dr. Miller (*op. cit.*) says: "The untutored savage, owing to a nervous organization less sensitive to his environment, can exist and be healthy in mind and body under conditions that will seriously affect the man of finer sensibilities from culture and education. The negro in slavery had 'no thought for the morrow, wherewithal he should be fed and clothed;' nor did the claims of family press upon him to worry and affect his mind; no ambitious hopes stirred his brain as to the possibilities of his future; but 'far from the maddening crowd's ignoble strife,' he spent his quiet, humble life in his little log cabin, with his master to care for every want of self and family, in sickness and in health."

"It is an undisputed fact, known to our Southern people, that no race of men ever lived under better hygienic restraints. * * * * Their habits of life were regular, their food and clothing were substantial and sufficient, as a rule, and the edict of the master kept indoors at night and restrained them from promiscuous sexual indulgence, and the baneful influences of the liquor saloon. In sickness, he was promptly and properly cared for by physician and nurse. Freedom came to him and a change came over his entire life. Under his former manner of life he enjoyed a wonderful immunity from brain and lung trouble, and, I confidently assert, that the germs of these troubles came to the same man and race in consequence of his changed environment and the manner of his life which followed.

"In his ignorance of the laws of his being, the functions of citizenship, and the responsibilities and duties which freedom imposed, demands were made upon the negro which his intellectual parts were unable to discharge. In his former conditions none of these things disturbed his mind. Immediately the restraining influences which had been such conservators of healthfulness of mind and body were removed, thousands left the quiet homes and regular life of the country for crowded and badly ventilated houses of the towns. These were often located in the midst of unhealthy surroundings, their occupants without regular employment ekeing out a precarious existence."

Dr. W. B. Barnes (*above cited*) says that the cause of the increase of insanity and consumption among the negro population are deprivation, exposure, poor hygiene, difficulty of self-preservation and mental anxiety. Dr. R. J. Preston (*above cited*) says that the increase of these diseases among the negro since emancipation is due to the cares of life which are thrown on them, bad hygienic surroundings, crowding together, and no restraint on dissipation and vice. Dr. Jas. D. Moncure (*above cited*) states that this increase is owing to crowding into cities, improvidence in living, and exposure to contagion.

All testimony goes to show, too, as has been intimated already, that the vices of alcoholism and syphilis are freely acquired by these people, and there is abundant evidence to prove that both of these influences have a special predilection of destroying the integrity of the nervous system and in this way to bring about insanity and phthisis.

Touching on these infirmities Dr. Powell says (*op. cit.*) "The ultimate results of alcoholic intemperence in this race is to be apprehended, perhaps, more than from any other influence, from the fact that there is a tendency to alcoholic intemperance not only on the part of the men, but also on that of many women. Could we be justified in expecting a perfect mental and physical organism from parents, both of whom were drunkards?"

He also says that "the direct and indirect effects of syphilis is one of the leading factors in the causation of insanity in the colored race. The large number that are tainted with syphilis in some sections is really alarming. I have ascertained from reliable sources that on some of the large plantations, where there is a great number of negroes, there are few of the adults that are sound or free from the taint of syphilis. I have conferred freely with quite a number of physicians who were actively engaged in general practice before the war, and they seem to be fully agreed in the statement that secondary or tertiary syphilis was almost unknown in the negro at that time."

He also gives the following very interesting account of the ravages of consumption among a settlement of negroes on three adjacent plantations in the southern part of Georgia, and which was communicated to him by Dr. J. C. Patterson, in whose experience it occurred. Prior to the war these negroes enjoyed remarkable mental and physical health; consumption, insanity, and similar wasting diseases were altogether unknown among them. At the time of their emancipation there were upon these three plantations, including children, between 400 and 500 hundred as healthy individuals as could be found, and free from all hereditary taint or tendency to any disease whatever. The negroes as a rule remained on the plantations where they were born. It was not long, however, before syphilis appeared among them, and it gradually spread over these plantations, the disease in nearly all cases going into the tertiary stage. Some ten or fifteen years later consumption and insanity began among the adults, and many of their children died from scrofula and tuberculoses, and it was the exception rather than the rule that the children lived. Bodily deformities and idiocy and other morbid conditions were very frequent among them.

Viewing the present condition of the Southern negro, then, from the standpoint of his changed surroundings, and taking into consideration the structure of the body, which is specially implicated in this change, it is perfectly obvious why insanity should develop as a necessary sequence in this soil. Upon the same ground, and upon no other, can we explain why pulmonary consumption should follow in the wake of insanity, and also increase in frequency. The truth is, that those who were able to realize all the factors which would be called into activity by this environmental change of the negro could, at the time it was made, have foretold the inevitable results, which are now but too evident to every one. It is a repetition, in part at least, of what happened, and happens now, to the aborigines of North America, Australia and New Zealand, who, in their unequal warfare with modern civilization, have been and are being fast decimated and exterminated by pulmonary phthisis.

1829 *Spruce Street.*

RECIPROCITY IN MEDICAL LICENSURE.

A Plea for Interstate Indorsement.*

By WILLIAM WARREN POTTER, M. D., Buffalo, N. Y.,

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For the second time it becomes my duty to assume the functions of presiding officer over the deliberations of this Confederation, and I beg at the outset to offer you my best thanks for this renewed mark of your favor.

Since our meeting at Atlanta last year the Confederation has suffered beyond measure in the death of Dr. Perry H. Millard, of St. Paul, one of its most able and useful members. Since the death of Dr. Rauch, I know of no one whose counsel has been so necessary to our welfare, and of none whose devotion to the interests of the organization has been greater. It was my sad privilege to visit him at Johns Hopkins Hospital only a month before his end, and then, though feeble in body, his clear and active mind was busy with the affairs of this Confederation; and especially with the report of the Committee on Minimum Standards, which he, as chairman, hoped to make at this meeting. But his final summons came on February 2nd, 1897, when this accomplished physician and useful citizen passed to his immortality. "His spirit was twenty, his years were fifty, but, alas! his body was eighty. Farewell."

* Presidential Address before the National Confederation of State Medical Examining and Licensing Boards, at its Seventh Annual Meeting, held at Philadelphia, Pa., May 31, 1897.

At our meeting last year it seemed proper to explain, in considerable detail, the objects of this organization, in order that there might be no misunderstanding as to its purpose. For some time previously the medical schools, or at least some of them, had looked with oblique eyes upon our movements, fearing possibly that we might be scheming to interfere with their prerogatives in the educational field. At first, too, some of them were inclined to criticise the provision made in most of the States that teachers in medical colleges shall not be eligible to appointment on examining boards. The wisdom of this proviso, however, must be apparent to every thinking man. No one disputes the fact that there must be absolute impartiality in the examinations; but how could this prevail if college teachers were made members? Obviously, one college would be jealous of another, and there would be no end of criticism and contention over the work as well as the representation on the boards; especially so in those States in which there are several schools. It was further alleged, in some quarters, that none but teachers were competent to prepare questions or mark answers. The absurdity of this suggestion has been abundantly proven. As a matter of fact, the test of the State examination is different from that applied to undergraduates. The State examiners must, by a few well chosen and comprehensive questions in each topic, determine a man's general fitness to practice the science and art of medicine. They must so frame the few questions they are permitted to ask, and which there is but scant time to answer, so as best to develop that fact in a general way. On the other hand, teachers having been in close relationship with their pupils for three or four years, merely examine upon the subjects in which they have given instruction; they often ask categorical questions or those admitting of incomplete answers—a defect that is expected to be supplied in answer to the next question, in further elaboration of the subject, which is easily understood to follow. This method is quite right and proper in a teacher's relation to the pupil or the candidate for the doctorate degree, but not admissible from our standpoint. Here each question must be clear, comprehensive and complete in itself, not susceptible of being answered by "Yes" or "No." Ours is, or should be, essentially a post-graduate examination.

In order to test this matter, I have asked teachers, in a few instances, to submit groups of questions; but I have found them, speaking generally, not adapted to the State test, although quite satisfactory, to ask at pass examinations or of candidates for the doctorate degree. A State examiner will soon acquire the skill of asking the sort of questions best adapted to his work, especially those that will best test the quality of instruction the candidate has received. Once this important knowledge is obtained, his services become of incalculable benefit to the State, and he should be retained as long as he will consent to serve.

Another fear of the schools was that the high standards would empty their benches, or that there would be such a diminution of pupils as to materially deplete their incomes. Quite the contrary has been the fact. Bellevue, at New York, graduated a larger class this year than in some years past, and its lecture-rooms are reported to have been full. The College of Physicians and Surgeons (Medical Department of Columbia University) has found it difficult to provide room for its overflowing classes. In the city of Philadelphia, which, since an early day, has been a centre of medical education, the schools are full even to embarrassment. In Buffalo, the University Medical College never had so many matriculates nor so large a graduating class as this year; and so it is wherever high standards have been adopted. The explanation is not difficult; students want the best; it costs them no more in the end, and serves them much more satisfactorily in their early struggle for recognition and professional favor, as well as in maintaining a high position in later years

It was made apparent at our meeting last year that the examiners compare favorably in education and *personnel* with the professors with whom we were assembled in joint session; and I hardly think it likely that we shall again hear the challenge, given probably more to cover a retreat than to mask an advance—"Who shall examine the examiners?" The answer, were one necessary, is not difficult to find; for the self-same authority that examines the examiners will no doubt find it an agreeable duty likewise to examine the professors.

No! there is no disagreement between the college faculties and the State examining boards, for it has been clearly demonstrated that they are friends. Their interests are common, and their objects one. They must not be drawn into antagonism by the indiscreet utterances of a few misguided though well-meaning persons. Each is working in separate yet contiguous fields, and all are striving for the same purpose, namely, to obtain the best possible equipment for every man and woman sent out

over this broad land to practice the profession of medicine.

There is, then, less occasion for extended remark now than heretofore, as I have already intimated; hence I shall address myself to the discussion of a single topic; one, however, of paramount importance.

INTERSTATE EXCHANGE OF LICENSES—THE PROBLEM.

There are, at this moment, two questions pertaining to State control of medical practice that seem to tower above all others in the minds of many physicians, which demand our most careful attention and challenge our deliberate judgment. The two are, however, so inseparable that in reality they may be considered as integral parts of one subject and discussed together. I refer to—1, minimum standards of requirements to enter upon the study of, acquire a diploma in, and obtain a State license for the practice of medicine; and 2, to the interstate indorsement or recognition of licenses, so that, under prescribed rules, a licensee of one State may be permitted to practice in any other State in which he may seek a temporary or permanent residence.

It goes without saying that an exchange of these official courtesies between the States "is a consummation most devoutly to be wished" by every friend of State control in medicine. It is one of the principal objects that this Confederation is laboring to accomplish. It is, at the same time, one of the most difficult problems thrust upon us for solution. No one can deny the fact that it is pleasant to contemplate a time—I trust in the near future—when we may have a National Registration Bureau, where every legally qualified reputable physician may be recorded, and when all physicians whose names appear on this register, and whose licenses are properly indorsed by the registrar, may pass from one State to another in the practice of their profession and in the enjoyment of all the privileges thereto appertaining. But how is this to be established with celerity and with justice to all concerned? The idealogues who were chiefly interested in the agitation of the question of reciprocity of licensure, assert that unless an interstate exchange is arranged, and that speedily, the whole system of State control in medicine will go to the wall. Whether this is given out in the nature of a threat, or a prediction, I know not, but there are indications that lead me to suspect the former. These men, I believe, are, for the most part, specialists who spend the vacation months at summer resorts, watering places, or on comfortable farms that their plethoric purses have secured in States more or less remote from their homes. They expect to make a snug sum from consultations and office patients during the vacation season, but do not relish the idea of being compelled to "undergo the nuisance of examinations," as they characterize it, in the States they have chosen for their holiday practice. They are frequently men of influence, who seek to prejudice their medical friends against the system by pointing out what they are pleased to term the injustice of applying the State laws in their cases, and then proceed to air their grievances in the columns of medical journals as a court of last resort. While I have no doubt that the denial of reciprocity now and then works hardship to deserving men, who perchance must change their residences, but can ill afford to spare the time and money to take a new examination, I yet fail to see wherein the class of men first above referred to, and who prate the loudest about it, are deserving of special sympathy. They can well afford to submit to an examination in the States, where they pass a profitable and easy summer; moreover, I am unable to discover any injustice in compelling them to comply with existing laws. Shall a State require of its own citizens a compliance with its practice laws, and at the same time grant to the well-to do summer specialist exemption from their operation? As the State laws, for the most part, forbid discrimination against the inhabitants of each, there is both a moral and a legal bar to such exemptions.

EQUALITY OF STANDARD A BASIS FOR RECIPROCITY; THE OBSTACLES.

The only equitable basis upon which reciprocity can be established that appears both feasible and practicable, is that of equality of standards for admission to the study and practice of medicine. This implies an equalization of the preliminary requirements of medical students and a uniformity of applying the tests; a uniform period of collegiate training including uniformity of methods of teaching; and, finally, an absolute similarity in the methods of conducting State examinations and granting licenses. A minimum standard of preliminary qualifications is important to agree upon. This ought to be done in a uniform manner by all the States for the sake of the good name of our profession even if there were no other cogent reasons demanding it. American medicine ought not to be disgraced any longer by illiterate physicians; hence illiterate students ought not to be admitted to our medical schools.

If we cannot agree upon any other question we ought to demand this much as a united profession.

What, then, shall be the minimum limit of education below which a student of medicine shall not be accepted? No more important question awaits answer but it is one on which, I am sorry to say, there is much diversity of opinion. If a man's mind has not already been disciplined to the extent of acquiring a good English education before he takes up the study of medicine, it presents a sorry foundation upon which to engraft a knowledge of such a multiform science and art. It is far more important, in my view, to agree upon a reasonably conservative standard of minimum requirements than it is to insist upon extending the terms of medical teaching to four years; since it is better to teach three years of medicine to a well-trained mind than to demand four years' training of an illiterate student. I hope this cardinal principle can be definitely settled to the satisfaction of all the States at an early day.

But let us pass to the next topic, namely, uniform periods of collegiate training. Here, fortunately, there is less diversity of opinion, thanks to the good work of the Association of American Medical Colleges. Under the stimulating influence of the American Academy of Medicine, well seconded as I believe by this Confederation, we find a public sentiment fast settling to the conclusion that four years is quite short time enough in which to acquire the proper training and knowledge to fit one for the doctorate degree. It must be remembered that it is required now-a-days of the undergraduates to pursue courses in anatomic, physiologic, chemic, biologic, pathologic and bacteriologic laboratories, and to undergo training in medical, surgical and obstetric clinics. Add to this the necessary didatic and recitative courses besides training in special techniques —microscopy, ophthalmoscopy, laryngoscopy and the like. With all these, besides much other information that must be acquired, and who shall say that four years is too long a time to devote to college work? It would be interesting in this relation to trace the progress that has been made in the last quarter century in the various departments of medicine; but this is as familiar to you as to me. You know how the complexity of the present age with its rapid transit and instantaneous methods of communication, has correspondingly increased the assaults by the enemies of health that are multiplying with such marvelous rapidity. To meet this complexity requires a mind more deeply and broadly cultivated; preparations for receiving and utilizing medical instruction must be increased and lengthened. As our cultivation develops, our immunity from disease lessens, hence our vigilance and efficiency must be greater, our period of preparation longer, and our training increased in length, depth and breath. It is, therefore, with pleasure that we observe and heartily approve the good work of the Association of American Medical Colleges that is arranging the curricula in such a manner as will be adapted to the environment of the present day. In this relation it would also appear essential that methods of teaching should be reduced to a degree of uniformity that heretofore has not been attained. With a universal establishment of four years' courses in American medical colleges, it will become appropriate for them to grade their curricula to as near a common level as may be consistent with surrounding conditions. Methods of teaching in all the laboratory departments could easily be conducted on a scale of similarity that would make them practically uniform in all colleges.

The third condition to be standardized is one that immediately concerns this Confederation, and it becomes us to deal with it in a most thorough-going manner. The first step toward equalizing methods of applying the separate examination for license in the several States, it seems to me, is to bring the examiners together on the subject. If they can be made to agree upon questions concerning their all-important function, then we have gone a long way toward establishing uniform methods. If, however, they differ in opinion as to the application of the principle in the several States, then the prospect for speedy adjustment presents a more discouraging view. The first point that offers itself is so plain that I am sure no one will attempt to dispute it. The foundation principle of a separate examination for license to practice, is that it shall be applied to all with absolute impartiality; there must be no exceptions to the rule—no exemptions. While it is true that a law on this subject cannot be made retro-active, and that all legal practitioners at the date of its passage must continue to be recognized, yet all others must be examined; and so the work must continue from year to year. Another inflexible rule that ought to prevail is that a diploma from a registered school should be demanded as a passport to the State examination. The logical conclusion is that a State examination is supplemental and consecutive to that of the schools, and that it should be refused in all

cases where applicants are not holders of legally obtained diplomas from registered and recognized colleges. If this rule were scrupulously enforced, it would deprive medical college faculties of grounds for any further opposition to State control. If, on the other hand, any of the State examining boards are permitted to examine undergraduates for license, it enables them to set up a standard of their own, which is antagonistic to the underlying principle of State control, and, I fear, subversive to the best interests of reform in medical education. When the duties of medical examiners are reduced to the mere question of determining the qualifications of such individuals as legally constituted schools shall turn over to them with M. D. degrees, they will have served the whole purpose for which they have been created. It is understood that there must be a uniform system of recognizing and registering the medical schools in the several States.

With the foregoing principle once settled, the minor details of standardizing State medical examinations for license could be more easily arranged. A uniform system of propounding and marking questions becomes desirable. For instance, if it could be agreed that ten questions in each department or topic should be asked and that each answer should have a possible value of ten points; and, further, that the total possibilities of the examination should be fixed at 100 points maximum and 75 points minimum in each topic, we could easily approach uniformity in this part of our work. The only remaining important question would be as to the valuation of the answers. This necessarily will always vary in degree, since the personal equation of the examiner enters somewhat largely into its outcome. It is a well-known fact that some examiners are inclined to a high, others to medium, and still others to a low valuation; but with experience and an interchange of opinion on the subject, this factor would soon be reduced to an exiguity that would render it comparatively unimportant.

LEGISLATIVE ENACTMENTS.—THE SOLUTION.

These, then, are the essential steps towards reciprocity; these are the obstacles to be overcome before it can be accomplished. The remedies lie in legislative enactments, and these, speaking generally, are of slow development. Nevertheless, with a healthy public opinion once aroused on the subject legislative bodies will soon take heed and adopt adequate measures to overcome defects. The newer States are likely to fall into the front line sooner than the older ones that already have imperfect laws. Public opinion moves faster, and I had almost said in a sounder fashion, as we travel toward the Occident. This in some respects is no doubt true. Montana, for instance, stands at the forefront in all of its requirements for State license. Minnesota, too, has been a pioneer in the movement for advanced standards and has one of the best laws. Moreover, we may expect those States east or west, north or south, that as yet have no laws relating to medical practice, taking heed to the necessities arising under the present conditions and profiting by the experience of those States that have preceded them in relation to State licensure, will soon enact laws that will meet all the conditions of the present day and which will satisfy the most idealogistic views.

At present twenty-seven States demand separate examination for license to practice medicine. In fifteen of these a legally obtained and possessed diploma is the first condition imposed; without it a candidate cannot be admitted to the examination. It only remains for these States by statutory enactments to bring their preliminary requirements to a common level, and then for their several examining boards to agree upon uniformity of methods, when, lo, the question of reciprocity is solved! A license granted by one of these States will then be valid in all others of this class, upon proving identity, character and the payment of whatever fee may be imposed. With reciprocity once accomplished between these States, the others one, by one, will soon afterward establish themselves on the reciprocity basis in self-defence, if for no other or better reason.

Those who most loudly and persistently demand interstate indorsement aim their criticisms at the examining boards, holding them responsible for all their woes; whereas, as a matter of fact, the examiners have nothing whatever to do with the question. They are simply agents of the States to administer the laws as they find them, and cannot change the practice in regard to reciprocal interchange of registration. The statutes in every instance with which I am familiar merely permit the acceptance and registration of licenses issued by other States where the standards are at least equal in all respects to those of the State issuing the license. This means, if it has any significance whatever, that in all preliminary requirements, in collegiate training, and in State examinations, one and all, there must be an equality and a uniformity of standards before licenses can be accepted for registration in a reciprocal manner.

The precise language of the New York stat-

ute on this subject is as follows: "Applicants examined and licensed by other State examining boards registered by the regents as maintaining standards not lower than those provided by this article . . . may, without further examination, on payment of $10 to the regents and on submitting such evidence as they may require, receive from them an indorsement of their licenses or diplomas conferring all rights and privileges of a regent's license issued after examination." This principle was reaffirmed in an amendment to the practice law passed March 21, 1896, in the following terms: "New York medical schools and New York medical students shall not be discriminated against by the registration of any medical school out of the State, whose minimum graduation standard is less than that fixed by statute for New York medical schools."

As many other States have enacted statutes fashioned after that of New York, containing this particular proviso, and as still other States hold to the same provision in effect, it is easy to understand how powerless the examiners are in the premises. These demands of the restless and migratory doctors must be taken to the State legislative halls and there made known if relief is expected. Meanwhile, the members of this Confederation may assist in bringing the matter about more speedily by acquainting the legislatures with the difficulties to be overcome, and by urgently recommending the adoption of such amendments to existing laws as will meet and remove the present defects.

My object in discussing this subject in detail is to place the examiners right before the country in regard to it, and to divert further criticism against the delay of reciprocity into the proper channel.

PROGRESS DURING THE YEAR.

During the past year attempts have been made in nine States and Territories to establish medical examining boards, in four of which efforts have been successful. Those that have joined the list with practice laws are: The District of Columbia, Idaho, Indiana and New Hampshire. The laws of New Hampshire, District of Columbia and Idaho make a diploma from a registered school a requisite to enter the examination. In Indiana the law is modeled somewhat after that of Ohio, and is a substantial beginning in a State that has sadly needed protection from charlatans and medical pretenders. So in the academic year just now about to close, there has been substantial gain in the direction of State control, even if some important States have fallen "just outside the breastworks." These no doubt will re-form their lines and come to the attack another year with full promise of success. If four States and Territories are added to the list each year, in a short time we shall be able to rejoice in a professional rehabilitation that will compel the admission of the American licentiate to the best medical standing wherever civilization exists.

It seems important, in view of the present condition of State control, that the committee on minimum standards, appointed last year, shall be continued as a standing committee of this Confederation, with enlarged powers that shall include the question of reciprocity. I desire to invite your attention to the publication of a brochure entitled "State Requirements for the Practice of Medicine; a Guide to the Qualifications and Methods of Procedure to enter upon the Practice of Medicine in the United States," by Dr. Charles McIntire, of Easton, Pa. It constitutes the Bulletin of the American Academy of Medicine for February, 1897, and is by far the most complete publication on the subject yet issued. If secretaries of boards had paid more attention to requests for information, the book would have been absolutely accurate up to the date of its issue; as it is, it is surprising how much Dr. McIntire has been able to furnish of value. Every State examiner, and especially every secretary, should be supplied with this guide, and it should be placed on file in all public libraries.

QUESTIONS OF PUBLIC HEALTH ARE INVOLVED.

To return for a moment and finally to the special subject matter of this paper, permit me to say that, in any event and under all circumstances, the honest and earnest friends of reciprocity may be sure of the active and zealous co-operation of this Confederation in all reasonable efforts to establish it. In most of the States where State license is now required, the struggle to obtain even imperfect laws has been prolonged and the contest has been exasperating as well as fatiguing. Every possible influence has been brought to bear on legislatures to prevent even a conservative recognition of the principle. Nor is this all; after laws have been passed making a good start in the direction of this reform, the State medical societies, through whose influence, speaking generally, the measures have been adopted, have been kept constantly on the defensive at legislative hearings and otherwise to prevent amendments to existing statutes that would weaken or tend to destroy their usefulness.

These proposed amendments generally have their origin in spite, malice, caprice, or vengeance, and should always be regarded with suspicion by legislative bodies. It will be a happy day for the friends of State license when legislatures can be persuaded to turn a deaf ear to all amendments that are proposed outside of State medical societies or State boards of medical examiners. This would save much time to members of legislative bodies and give security of feeling to the medical profession. If legislators could be made to appreciate the fact that public health interests are involved in the question of State license; that every attempt to weaken the principle is a blow at public sanitation, and that higher standards of medical education mean better health for the people, then perhaps it would be easier to obtain and maintain the necessary laws to protect the commonwealth against that kind of ignorance, superstition, or super-refinement that always lurks in the environment of quackery.

Traveling and advertising quacks, Christian-science and faith healers, clairvoyant and spiritualistic mountebanks—these and every other kind of pretender that panders to the ignorance and superstition of the people, leeching their money and sapping their vital force, ought to be no longer tolerated by enlightened communities; and if legislatures would lend a willing hand, these villainous enemies of public and individual health and prosperity may soon be disposed of in a fashion becoming an intelligent and progressive age.

284 *Franklin Street.*

MECHANISM AND TREATMENT OF PERINEAL LACERATIONS.*

By JOSEPH PRICE, M. D., Philadelphia, Pa.

Many men who profess intelligence of surgical procedures instituted for the relief of abdominal difficulties, are entirely unprepared to deal with injuries of the perineum or cervix. There are even many of large obstetrical practice who appear sincere in declaring that no rupture of the perineum has ever occurred in their work, and that all their patients have normal perinei. There is but one explanation of this. We need only recollect that prominent instructors in obstetrics have declared that a laceration of the perineum is practically impossible under their various methods of procedure, and therefore omit even a preparation for the contingency. We cannot so easily comprehend, however, the negligence of practitioners whose personal motives should have induced a greater care in this matter than we now observe.

It is discouraging to me to consider the haste with which our younger physicians attempt the larger work of abdominal surgery, and seem not to appreciate the necessity of a minute understanding of the functions of tissues, especially those involved in and surrounding organs with which we have to deal in obstetric practice. It is a matter which no amount of talk will remedy. As mere economy in this ambition, I would suggest that a little more attention be directed to this particular subject of perineal lacerations. That a rupture of the perineum may be so entirely concealed as to eventually deceive the most careful examiner there is no doubt; neither do I doubt that the search is often omitted or unintelligently performed.

The teaching that these repairs are easily made has led to much unskilful treatment, treatment that leaves the patient in a worse condition than existed before anything was done in the way of attempted repair. The supposed condition tempts to the undertaking of that which, while not the most difficult surgery, requires, from the very delicacy and sensitiveness of the parts, careful and refined work.

It would not be unprofitable for a surgeon to undergo an apprenticeship in a mechanic's workshop, where his instructor could explain the cycloidal and epicycloidal lines upon which his gear wheels must be formed, or allow him to experience directly the very disastrous results of the slightest neglect in manipulating those very exact little dealers, machines. Then I think he would appreciate the responsibility of altering indefinitely the organs of a human being, or of suffering them to remain unrepaired where accident has changed or broken normal relations. True, he has in Nature a wonderful corrector of his mischief, whose effort is ever for cure. Nature has been defined "as the good will of God expressed in facts"; nowhere has this good will been more marvelously expressed than in the correction of our errors. But it should be kept in mind that Nature despises an irrational, blundering performance as she does a vacuum.

Our surgical triumphs are largely those of common sense; they are the result of reducing everything to the simplest form consistent with completeness. There is not sufficient apprecia-

* Read at the Semi-Centennial Meeting of the American Medical Association, Philadelphia, June 1–4, 1897.

tion of the value of simplicity and directness, nor of completeness. In plastic surgery, as in all other, I would aim toward such an end. I would do an operation that would restore the perineum to as natural a condition as possible. A great deal depends on whether the tear be partial or complete, central or lateral.

It must be remembered that the perineum proper is made up of all muscles composing the lower *pelvic diaphragm*, and that this pelvic diaphragm is anatomically the adjunct and co-efficient of the upper or true diaphragm of the respiratory apparatus. This fact is of value in estimating the importance and significance of pelvic lacerations. It should be remembered that every perineal tear begins on the inside, or, in other words, proceeds from above downward, from within outward—it happens only as an accident of extreme rarity that there is any important outside tear without a co-existing internal tear. And beside this fact another one is to be placed—there may be most serious internal laceration without any external manifestation, so far as the skin is concerned. There may be so much over-distension of the tissues that all pelvic support is absent without any evidence of real laceration. This sort of a tear bears the same relation to evident laceration as does a free open incision of a muscle to a subcutaneous division of a muscle. Complete perineal laceration is a term usually applied to tears through the sphincter. These tears are regarded as the most important on account of the discomfort they entail. Women with the sphincter ani lacerated have a miserable existence, though apart from this the other complications and real calamities of pelvic lacerations are often absent. The sphincter may be torn through, and still there may be no sagging of the pelvic contents, no cystocele, and no rectocele, no prolapsus uteri. This fact is explicable: in a distinctly central tear the lateral attachment of the muscles and fascia are uninjured, while the middle junction of the perineal muscles is simply split, divided, or separated, and consequently the support, while diminished, is sufficient to withstand the pressure of the pelvic contents. The resistance of the muscles is diminished—not destroyed. Complete tears, in my opinion, ought to be considered as including all deep fascial and muscle lacerations, either on one or both sides, with a co-existing or non-co-existing sphincter tear, as the case may be.

All these tears should be approached as distinct surgical lesions, to be repaired in the line of their anatomic destruction, and not as cosmetic operations, the object of which is to obtain superficial appearances without regard to completeness and utility. Heaping up of tissue, outside the lines of resistance, and tension or mere thickening of the mucous membrane and skin, does not make a true perineum; neither does a set of outside sutures, however much they may draw the parts together, afford any anatomic counterpart of a perineum. From this point of view all the so-called flap-splitting operations for perineal tears are only puckering operations, bringing parts within the sutures that have never been severed, and in many cases taking them out of their proper relations. Flap-splitting operations are really *misleading superficial procedures.* They attack tissues not in the lines of their real rupture, and do not and cannot go to the real origin of the tears. They do not afford an end-to-end adaptation of the torn muscle, but substitute for this a lateral apposition, simulating *end-to-end* restoration, which can be readily demonstrated. The Emmet operation, as originally devised and afterward modified by him, is the foundation for all successful operations on the lacerated perineum, either with or without *sphincter* tear. This, it is to be remembered, is always an inside operation.

Even in sphincter tears, two or three outside stitches are all that in a majority of cases are necessary. Its so-called modifications are extensions only of the original idea of Emmet, and are only original in the use of a greater denudation, with a consequent increase in the number of stitches.

The loss of tissue objected to in the Emmet operation is more than equalled or compensated for by the lateral apposition. Moreover, it is to be kept in mind that the sphincter is a distinct anatomic unit, and that any flap-splitting which attempts to repair this, together with other laceration, is over-reaching itself and attempting too much in its efforts at one time to repair distinct lesions. When the fascia is injured, in addition to the sphincter tear, the injury is to be remedied by the ordinary Emmet operation. This operation, by its denudations, brings into relation large triangular levels on one or both sides, putting into relation the torn ends of the torn muscles. When the sphincter ani is ruptured, its torn ends are drawn outward and backward until they lie on a line with the posterior line of the rectum. In other words, the muscle is straightened. The depressions on either side of the anus are caused by the torn ends of the muscle retracting the mucous membrane, thus forming the characteristic dimples.

The denudation should be made so as to ex-

pose the cut ends of the muscle on either side, and continued upward into the bowel as far as the laceration extends, between the rectum and vagina, into the rectovaginal tissue. Two sets of sutures are to be used ordinarily. The first is the deep-set vaginal, and restores the rectovaginal septum, bringing the parts into the relation they would assume were there no sphincter tear, while the other sutures are introduced as in an ordinary or fascial tear. The rectal or vaginal sutures are, of course, the first to be introduced. If catgut is used for the closure of the bowel, their method of introduction is left to the choice of the operator. If silk, silver wire, or silkworm-gut is used, the sutures must be introduced so as to be tied, twisted, or shotted on the vaginal side. After the tear into the rectovaginal septum has been closed, attention must be given to bringing the ends of the sphincter accurately into apposition. For this purpose the needle must be introduced at the edge of the torn muscle, directed upward, then backward, to the internal edge of the muscle, so as to bring the retracted central portions to a level. If this procedure is adopted on both sides, a flat surface of muscular tissue is obtained and the apposition will be complete. Failure of this operation is easily discoverable. If a fistula persists, there is generally a more or less complete failure of the operation, and the desired effect is not obtained.

To insure the complete success of the operation, extreme care is necessary to restore the bowel and to treat the sphincter as an integral portion of the bowel, bringing the sutures down so as to leave no pocket between the bowel proper and that portion into which the sphincter is inserted.

The instruments formerly suggested as the essentials for perineal repair, of which the Peaslee or Baker-Brown needle may be taken as the type, have no place in the delicate scientific surgery of these parts. Big sutures, heavy ligatures, clumsy instruments have no more place here than in other surgery. The ordinary short, strong sewing-needle serves the purpose fully in most cases, though the Emmet strong, fine, short needle for general use is preferable. Silkworm-gut or silver wire are the preferable sutures. These, with a needle-holder without lock, shot-compressor and tenaculum, are really the only instruments required. Here, as in all surgery, few and simple instruments serve best.

LARYNGEAL DIPHTHERIA,

Treated by Antitoxin and Calomel Fumigation.*

By E. C. LEVY, M. D., Richmond, Va.,

Professor of Histology, Pathology, and Bacteriology, Medical College of Virginia.

I wish to report this case, not because it presents any remarkable phases to those of you who have availed yourselves of the remedies which were used in its treatment, but merely to illustrate how the advent of these additions to our means of combating this dread disease has revolutionized its treatment. So strong a statement as this would not be justifiable were it the outcome of the observation of a single case, but I make it confidently because the result in the case I wish to report is in conformity with my previous experience in a large number of cases at the Willard Parker Hospital, New York, and with the reports of thousands of cases treated by others during the past few years.

Gladys E., age 4 years 6 months, was seen by Dr. Upshur on the morning of Friday, May 28. The following history was obtained from the parents: Previous history, negative; had been suffering with a slight "cold" for three days. On night of 26th, had mild attack of croup. Was much better next day, but complained of throat hurting her. Had another attack of croup on night of Thursday, 27th, which did not improve on the following day. From the time of her first attack of croup, the child was drowsy and languid. On the morning of Friday, the 28th, the parents took her to a neighboring drugstore for advice, but to the credit of this member of a much-abused fraternity, the druggist's only advice was to send for a doctor.

When Dr. Upshur saw the case, there was marked obstructive dyspnœa, and a small patch of pseudo-membrane on the left tonsil. These symptoms led the doctor to diagnose the case as one of diphtheria, and he prescribed a mixture of tinct. ferri chloridi, hydrarg. chloridi corros. and glycerin, In the afternoon, he sent for me to take a culture. By this time, the croup symptoms were much more pronounced, and the pseudo-membrane above had spread rapidly, both tonsils and portions of the soft palate being covered with a thick yellow deposit. At 9 P. M., Dr. Upshur telephoned for me to see the case in consulta-

* Read before the Richmond Academy of Medicine and Surgery, June 8, 1897.

tion. I advised the immediate use of antitoxin. As Dr. Upshur was to leave town on the following day, he requested me to take charge of the case.

I at once ordered the neck poulticed, and injected 1800 units of antitoxin as soon as it could be procured, continuing the mixture which Dr. Upshur had prescribed. (I injected at the same time 200 units into the two-year-old sister of the patient, who had been in the same room, and whom it was impossible to isolate.) During the early part of the night, there was considerable dyspnœa, with retraction of the supra-sternal notch and supra-clavicular regions, and I was prepared to intubate should it become necessary. Later on, the dyspnœa became less, and I left Dr. Dorsey Morris in charge for the night.

On seeing the child the following morning (Saturday), Dr. Morris reported that she had passed a comparatively comfortable night, and had coughed up a good size piece of membrane. During the day, she continued to do well. The culture taken on the preceding day showed an abundant growth of Klebs-Loeffler bacilli.

At 4:30 P. M., I injected 1000 units more of antitoxin. At midnight, I again saw the child and found her suffering with urgent dyspnœa, which, the nurse reported, had begun to appear about 9 o'clock. I discontinued the iron and bichloride mixture, and ordered a mixture of syrup of ipecac and compound syrup of squills to be given every hour to the point of nausea.

I was sent for hurriedly four hours later, and found the child much worse. Retraction was now marked, the entire sternum sinking in at each inspiration, and there was beginning cyanosis. The necessity for giving relief was imperative. I had the instruments all prepared for intubation, but decided, before resorting to operative measures, which always increase the gravity of a case, especially in private practice, to try calomel fumigation, believing, as I did, that there was present a considerable spasmodic element. An improvised tent was accordingly rigged up over the child and twenty grains of calomel sublimated under it. In five minutes improvement could be noticed; in fifteen minutes all urgent symptoms had subsided, and in half an hour the child was asleep and breathing so quietly that her respirations could not be heard across the room. On paying my afternoon call, I found the child sitting up in bed, playing with her doll and begging, with a loud voice, to be allowed to sit at the table.

On the following day I began, the administration of strych. sulph., gr. $\frac{1}{120}$th, four times a day. The child, has made an uninterrupted recovery. The membrane disappeared from the throat on last Wednesday, the 2d, but the bacilli are still persistent.

The little sister of the patient, to whom I gave 200 units of antitoxin, has been in the sick-room the entire time, but has developed no symptoms of the disease.

This is the third case of laryngeal diphtheria I had seen in consultation during the past six months. The other two I had the honor of reporting to the Academy on a previous occasion. The first of these cases was not a very severe one, although the dyspnœa was very urgent at times, and the child made a prompt recovery under antitoxin, general sustaining treatment, and steam inhalations. The second was a case seen in Manchester in consultation with Dr. Mathews. This case required intubation at once, and died, sixteen hours after I first saw it, from extension of membrane far down into the trachea.

The case I have reported to-night is a most instructive one, and illustrates forcibly the advantages of antitoxin treatment. Those who oppose this remedy must show us equal results obtained by other methods before any theoretical objections to its use will have weight. It also illustrates the point to which I have directed attention before on the floor of the Academy, viz.: that the use of antitoxin does not justify us in neglecting a single one of the other measures which time and experience have shown to be of benefit. In this case, had the other remedies, especially the calomel fumigation, not been resorted to, I believe the child would not have recovered. On the other hand, had antitoxin injections not been employed I am confident that all the other measures would have been unavailing. Any plan of treatment which, within forty hours, may convert a serious case of a most serious disease, laryngeal diphtheria, into one in which a favorable prognosis can be given, must commend itself to the consideration of every thoughtful physician.

813 *Floyd Avenue.*

North Carolina Tax on Doctors.

The Legislature of North Carolina has just reduced the license tax on doctors from ten to five dollars a year. But Virginia city doctors of five years' experience have to pay $25.75 a year, and a Richmond city license of from $10 to $75 a year—arbitrarily assessed.

LATERAL ANASTOMOSIS OF THE ILEUM AND COLON FOR COMPLETE OBSTRUCTION DUE TO TUMOR OF THE CÆCUM.

By CHAS. G. CANNADAY, M. D., Roanoke, Va.,
Surgeon to Rebekah Sanitarium, etc.

Obstruction of the bowels from any cause—most especially from the presence of a tumor—must be looked on at any and all times as of serious importance, and the prognosis is naturally graver than most conditions requiring surgical procedures, owing to the time required to unite the bowels and the condition of the patient to stand a grave operation. Thanks to the discoveries of some of our leading surgeons, the mortality has been greatly reduced during the past decade.

Senn, of Chicago, has probably done more to perfect intestinal surgery than any other man, though it remained for Murphy, of the same city, to discover a button that surpasses anything in the line of means for uniting the intestines, either end to end or laterally.

Time is what counts most in the mortality in all cœliotomies; therefore, we find the results of those who have had special training so superior to those less favored, because they can, owing to familiarity with the methods and surroundings, finish their work in so much less time; much time is also saved in the use of the Murphy button, and in no class of cases is this more essential than that of obstruction of the bowels.

I purchased, soon after it was announced they had been discovered, a set of these buttons, and in every cœliotomy they were sterilized with the intention of using them when the first chance should arrive. The case that I am about to relate offered the severest test that could be imagined, and I am satisfied that the patient's life is now due to the use of these buttons.

I crossed the ocean with Dr. J. B. Murphy and listened to the valuable paper he read before the International Congress at Rome in 1894, on the use of the button, and therefore naturally was much impressed with its usefulness, which I am now convinced has not been overdrawn.

Mrs. H., from an adjoining county, was referred to me December 10, 1895, and gave the following history: 3-para; no hereditary disease; age 34; married 13 years; last confinement 8 years ago; catamenia regular, painful, very profuse and prolonged. Five years ago, she commenced to have cramps in the bowels, that gradually grew worse, and the bowels became difficult to move; patient had lost much flesh during the last five years, and presented a careworn appearance. Palpation revealed a small mass in the right iliac region; the stomach tolerated only the lightest and most bland kinds of diet, and frequently her stomach would reject any and all kinds of food. She suffered from subinvolution of the uterus and endometritis, and for this she entered Rebekah Sanitarium on the above date, and had an operation that relieved her of these troubles; she returned home very much improved from rest and diet, etc., January 10, 1896.

September 12, 1896, this patient returned to the Sanitarium resolved to submit to any line of treatment that I might decide to be necessary. I found her very much emaciated, unable to walk or to stand, suffering continuously from attacks of cramp and griping pains in the stomach, and virtually starving to death; the bowels could only be moved slightly with great perseverance.

This patient was suffering from auto-infection and inanition in addition to her obstruction, and with rectal enemata of a nourishing nature, forced feeding, massage, rest, etc., I hoped to build her up sufficiently to enable her to undergo an operation.

This patient seemed to be improving in strength, and I went to Richmond to attend the meeting of the American Association of Obstetricans and Gynæcologists, but was telegraphed by the resident physician to come at once, as the patient needed the operation.

On my return on the 24th, I found all preparations made for a cœliotomy, and the patient's temperature sub-normal, pulse small and thready, cyanosis present, and all symptoms of shock.

I received the history that on the 23d the bowels refused to be moved by high enemata; vomiting commenced, which refused to be controlled by any measure, and during the day and night following she vomited seven grapes, each one covered with fecal matter. The grapes had been eaten one year before, and none had been taken since that time. They were in the same condition as when eaten, so far as digestion was concerned. The patient was very intelligent and truthful, and I could rely on her statement as to the time she had eaten the last grapes.

In the right iliac region, there could be easily palpated the cæcal tumor, very much enlarged, and evidently the cause of the obstruction. The location of the tumor was such that an incision about an inch from the spine of the ilium was made in an oblique direction, six

inches in length. This incision crossed at right angles an imaginary line drawn from the spine of the ilium to the umbilicus.

No attention was given to dividing the muscles in layers, as time was everything in this case. On entering the peritoneum, it was found that a large tumor, which was supposed to be cancerous, completely occluded the intestine and involved the entire cæcum; the glands of the mesentery were much involved, and the tumor extended completely down to the origin of the mesentery; at a glance, giving the information in the patient's condition that the entire removal was impossible.

I decided to perform lateral anastomosis of the intestine and leave the removal of the mass to be done when she should get in better condition. The ascending colon was incised two inches from the tumor, and the ileum about the same distance on the other side, and the anastomosis completed with the Murphy button.

The abdomen was rapidly closed by uniting, first the peritoneum, and then the muscles. The patient was put to bed in extremely unpromising condition, being much cyanosed and in considerable shock.

The time that elapsed from making the incision and putting the patient to bed was only thirty-five minutes, and fifteen minutes more, I am satisfied, in the operation would have been disastrous to the patient beyond doubt.

Intestinal anastomosis can be well done by three methods, viz: Senn's bone plates (that cannot be used for end to end approximation); the various kinds of sutures, or the Murphy button, that can be used for both the intestinal anastomosis and the end to end approximation. This procedure is indicated where free excision and end to end approximation is impossible, and also where the death of the patient would result from a more prolonged operation.

In the methods by suture, it is not always that you can invert a sufficiently small quantity of the intestine to insure no contraction at that point that will not render your operation less beneficial than is desired; with the Murphy button, such is not the case.

The fact that the patient can take nourishment at once after the use of the button is a point strongly in its favor.

The patient, under the proper treatment, got well rapidly without a rise of temperature, being able to take nourishment from the first, having the bowels moved on the second day, the button passing on the tenth day, and able to leave the Sanitarium on twenty-second day.

This patient now enjoys very good health, and I verily believe that a second operation will not be necessary.

STERCORIN AND CHOLESTEREMIA.*

By AUSTIN FLINT, M. D. New York, N. Y.

Professor of Physiology, Bellevue Hospital Medical College; Consulting Physician to Bellevue Hospital; Consulting Physician to the Manhattan State Hospital, etc.

Cholesteremia is by no means accepted as a distinct pathologic condition. Stercorin has just been re-discovered in Germany by two eminent physiologic chemists, who make no mention of its full description in 1862 and have even called it in another name. As it is, however, I may properly, as an American investigator, make my reclamation. Although my paper, (published in *Amer. Jour. Med. Sci.*, Oct., 1862), received "honorable mention" and substantial recognition from the Institute of France, and my observations have been verified and extended by French and German investigators, many writers on physiology and pathology, even the most recent, fail to recognize such a substance as stercorin and, in treating of cholesterin, speak of its function as obscure or unknown.† In an American Text-book of Physiology," Philadelphia, 1896, cholesterin is described as a constant constituent of the bile, very widely distributed in the body, and eliminated by the liver cells from the blood. "That it is an excretion is indicated by the fact that it is eliminated unchanged in the feces." Stercorin is not mentioned. As a matter of fact, cholesterin does not occur in the human feces in health, and its presence in this situation is exceptional.

In Hoppe-Seyler's *Zeitschrift für Physiologische Chemie*, Strassburg, 1896, is a paper by Bondzynski and Humncki, entitled "The Destination of Cholesterin in the Animal Organism." The authors claim to have discovered a new constituent of the human faces, which they call "*koprosterin.*" *This substance is identical with stercorin, fully described in* 1862. The original stercorin, of which specimens obtained in 1862 are in my possession, was extracted from the human feces by the following process: The dried and pulverized feces were extracted with ether. The etheral extract was passed through animal charcoal and afterwards evaporated. The residue was then extracted with boiling alcohol. The alcoholic extract was treated with potassium hydrate solution, at a temperature near the boiling point of water, in order to remove the fats by saponification, which were washed out with water until the filtrate

*Abstract of a part of an Address before the Semi-centennial Anniversary of the American Medical Association, Philadelphia, June 2, 1896.

† Foster, "A Text-book of Physiology," 1895, p. 336.

was neutral and perfectly clear. The filtrate was dried, extracted with ether, and the ethereal extract evaporated to dryness and extracted with boiling alcohol. The stercorin was obtained from the alcoholic extract by repeated crystallization. This process was exactly repeated in our recent observations, and, at the same time, stercorin was extracted by the process described by Bondzynski and Humnicki.

The opinion expressed by Hoppe-Seyler, Hofmann, and indeed many others, that stercorin simply is impure cholesterin, cannot have been based upon a practical knowledge of this substance. Stercorin has a well-defined formula—$C_{27}H_{48}O$—which has been calculated and verified by the formation of esters. Its crystals are quite different from crystals of cholesterin, and are invariable in form, arrangement and color. It was extracted by methods practically the same as those used in the extraction of cholesterin. In view of these facts, to assume that stercorin is an impure substance, one must deny a positive scientific basis to organic chemistry.

In the recent, as well as in the original, observations, it was clearly shown that cholesterin is changed into stercorin in passing down the intestinal canal. I found that this change involved processes incidental to intestinal digestion. Cholesterin, and not stercorin, was found in the feces of fasting animals and in the meconium. Bondzynski and Humnicki found an increased proportion of "koprosterin" in human feces after the ingestion of a certain quantity of cholesterin. They also showed that cholesterin unites readily with bromin, while "koprosterin" forms no such combination; and, indeed, by the use of bromin, these two substances may be separated when they exist together. They confirmed the empirical for their product by the formation of a number of esters.

It is now generally admitted that the bile, in addition to its function connected with digestion, contains one or more excrementitious matters. Taking into consideration the various ingredients of the bile, there seems to be but one which can logically be compared to urea. Cholesterin is found in many of the tissues and organs of the body, and exists in the blood. Likening it to urea, it becomes a question whether it is formed in the liver and discharged in the bile, or is merely separated from the blood by the liver and excreted.

Passing from these observations to the pathologic relations of cholesterin, after examining three specimens of normal blood, and finding the proportion of cholesterin from 0.445 to 0.751 of a part per thousand, examinations were made of the blood of patients with simple jaundice, and those with what is called icterus gravis, the cases terminating fatally with grave nervous symptoms. In a case of simple jaundice, terminating in recovery at the end of about four weeks, the blood contained 0.508 of a part per thousand; well within the limits in normal blood. In a case of jaundice with cirrhosis, terminating fatally with serious nervous disturbance, the blood taken six days before death contained 1.850 parts per thousand of cholesterin—an immense increase over the normal proportion. In this case, on *post-mortem* examination, the liver was found contracted, and the gall-bladder was shrunken, containing only about seven cubic centimetres of bile.

The question of *cholesteremia* has been much discussed since 1862, for the most part with scant approval or without acceptance. However, Picot,* in 1872, reported a fatal case of "grave jaundice" in which he determined a great increase in the proportion of cholesterin in the blood, 1.804 parts per thousand. Many attempts have been made, also, to produce toxic effects by injecting cholesterin into the blood, but most of them have been unsuccessful on account of mechanic obstruction of the blood-vessels. In 1873, however, Koloman Miller† succeeded by injecting cholesterin rubbed with glycerine and mixed with soap and water. In five experiments on dogs, injecting in each 0.045 gram of cholesterin, he produced a complete representation of the phenomena of "grave jaundice."

It must be remembered that the liver is by far the largest gland in the body; that it secretes a fluid which is known to have a double function, one connected with digestion and the other with the elimination of cholesterin; that the blood from the digestive tract all passes through this organ, where it undergoes certain changes; that it probably stores up the products of amylolytic digestion in the form of glycogen; that it arrests certain poisons, and that it is the chief organ concerned in the production of urea, which is discharged by the kidneys. It may have other uses in what is now called internal secretion, in addition to that of destruction of blood-corpuscles and the change of hemoglobin into bilirubin. With all these known varied uses of the liver, how-

* *Journal de l' Anatomie*, Paris, 1872, tome viii, p. 247, *et seq.*

† "Ueber Cholesterämie," *Archiv. für experimentelle Pathologie und Pharmakologie*, Leipzig, 1873, Bd. i, S. 213, *et seq.*.

ever, the pathology of hepatic diseases is most obscure. We do not know even the cause and mechanism of the formation of gall-stones, which are often composed almost entirely of cholesterin.

The term, *acholia*, as used in pathology, now means very little, and conveys no distinct idea of the causes of the nervous symptoms which attend the condition. The term *cholemia* is generally regarded as almost synonymous with jaundice. If cholesteremia be recognized as a distinct pathologic condition, with symptoms due either to the accumulation of cholesterin in the blood, acting as a toxic substance, or to imperfect separation of cholesterin from the nervous tissue, a positive advance will be made in our knowledge of the pathology of many obscure liver disorders.

The quantitative estimation of cholesterin in the blood is not difficult, and it does not require more than from four to six or eight grammes of blood. The only tedious manipulations are the drying, saponification and weighing; and these are readily done in a well-appointed laboratory. Some process may be devised which will expedite this extraction. If examinations of the blood were to be made in cases of obscure nervous disturbance, in epilepsy, and other disorders of this nature, it is possible that cholesterin may be found to play an important part in their pathology. The fact that bromin readily combines with cholesterin, taken in connection with the wide use of the bromids in diseases of the nervous system, is very suggestive. May not the bromids promote the elimination of cholesterin, a substance which is so insoluble and which forms few combinations? These points seem well worthy of the consideration of pathologists and therapeutists. Certainly the physiologic and pathologic relations of cholesterin offer a wide and, perhaps, fruitful field for further observation.

ADDRESS ON SURGERY.*

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As we celebrate on this occasion the semi-centennial of the organization of the American Medical Association in this city in 1847, it is very natural and proper that the Address on Surgery should be a review of the work done in the last fifty years, and by contrasting the state of surgery and of surgical teaching in 1847 with that which exists in 1897 to see what progress has been made.

Of the text-books in use forty years ago, except Pancoast's "Operative Surgery," every one of them was the work of a European. Gross' "System of Surgery," which has probably had a wider influence in educating the profession than any other general surgical text-book issued up to the present time, was first published in 1859. This was far in advance of most of the surgical text-books then in use. The literary labors of American surgeons consisted chiefly in translating foreign surgeries or in annotating American editions of English text-books. Within the last two decades, and especially the last, we all know, without my undertaking the invidious task of naming them, how many distinctly American surgeries have been written, and we may say, without undue national vanity, that they are the equals of any similar European works.

On more than one occasion I have had to call attention to the difference between American surgery and that of Europe. While in the department of the Practice of Surgery, after a full acquaintance and observation with European men and methods, I can state my deliberate conclusion, that the best American surgeons are the peers of the best European surgeons; yet in the department of original research, and especially of laboratory work, we must confess our very evident shortcomings.

To attempt to impress upon the members of the American Medical Association the need for such original research in this country is a work of supererogation; but I may, with propriety, insist, with all the ardent and intense conviction I feel, that every one of us, as occasion offers, should urge upon our wealthy, liberal-minded fellow-citizens the duty and also the privilege of founding, in connection with every medical school, laboratories of research, the good influence and beneficent results of which can never be estimated in paltry dollars and cents. Yet tried even by this commercial standard, science pays. The early recognition of the germs of cholera at the port of New York some years ago, by preventing the entrance of such a commerce-destroying epidemic, leaving wholly out of consideration the saving of human life, saved to the citizens of the metropolis more millions of dollars than are represented many times over by the cost of all the laboratories now existing in this country. Our merchants should be made to understand, therefore, that even from a financial point of

* Abstract of a part of an address delivered at the Semi-Centennial Meeting of the American Medical Association, Philadelphia, June 3, 1897.

view, to say nothing of the humanitarian, the cheapest means of preventing the enormous business losses which occur from epidemics is by such scientific and hygienic measures as the laboratory makes possible.

The scientific progress in this half-century of surgery has separated us as by a great gulf from the past. Great theologians, such as Calvin or a Jonathan Edwards, were they called to life, could discourse as learnedly as ever of predestination and free-will; great preachers, as a Beecher or a Spurgeon, could stir our souls and warm our hearts, as of old; great jurists, as a Justinian or a Marshall, could expound the same principles of law which hold good for all time; great forensic orators, as a Burke or a Webster, could convince us by the same arguments and arouse us by the same invectives or the same eloquence that made our fathers willing captives to their silver tongues. But to-day a Velpeau, a Sir William Fergusson, or a Pancoast, all of whom have died since 1867, could not teach modern surgical principles nor perform a modern surgical operation. Even our every-day surgical vocabulary—anæsthesia, bacteria, infection, immunity, antisepsis, and asepsis, toxin and antitoxin—would be unintelligible jargon to them; and our modern operations on the brain, the chest, the abdomen, and the pelvis, would make them wonder whether we had not lost our senses, until, seeing the almost uniform, and almost painless, recoveries, they would thank God for the magnificent progress of the last half-century which had vouchsafed such magical, nay, such almost divine, power to the modern surgeon.

The development of modern surgery, apart from surgical teaching, libraries, and laboratories, is dependent on several noteworthy factors. These have to do partly with the discovery and development of surgical principles, and partly with the development of surgical practice. Now the one and now the other is in advance. Each is the handmaid of the other. In Listerism, we see surgical practice outstripping surgical principles, for of Lister it might be truly said that, by the "scientific use of the imagination," he saw the germs "when as yet there were none of them." His surgical insight convinced him of the existence of the germs of suppuration years before Ogston's and Rosembaum's discovery of the pyogenic organism. On the other hand, the multiplication of these discoveries, which have followed, illustrate the converse—science forging ahead of practice and pointing the way to new achievements in the healing art.

Foremost among the important studies which the past fifty years have seen established on a firm foundation are *Pathology and Pathologic Anatomy.* It is not a little credit to America that the first "Pathology," written in the English language, was written by a young American doctor in a then small western town as early as 1839, and it was a graceful tribute to the author when Virchow, the Nestor of modern pathology, held up a copy of the first edition of Gross' "Pathological Anatomy," to the gaze of his fellow-scientists at a dinner tendered to the Nestor of American Surgery.

In spite of Gross' book, however, pathology and pathologic anatomy were almost unknown sciences in 1847. The Pathological Society of Dublin was founded in 1839, that of New York in 1844, that of London in 1846, and that of Philadelphia in 1857. The microscope, and especially microscopic methods of staining, section-cutting, and the like, were in their infancy, or may, indeed, be said scarcely to have existed. No accurate views of pathology could be entertained without these aids. What is now the heritage of every first-year student was beyond the possibilities of the most advanced teacher of fifty years ago.

Allied sciences have been put under tribute to surgery. In physics, the discovery of the *Röntgen ray* is so recent as to require only mention.

It is due, however, especially to the development of *Embryology* and *Comparative Anatomy*, in combination with pathology, that our views of the nature of disease have become so much more accurate.

The year before the American Medical Association was organized the world was startled and surgery revolutionized by the introduction of anæsthesia; first of ether in America in 1846, and of chloroform in Edinburgh in the following year. What this has done for the amelioration of the horrors of pre-anæsthetic surgery very few now living can appreciate. Instead of shrieks, cries, and groans of the patient, everything now proceeds with that quiet and leisure which is essential to the performance of many, if not most, of our modern, elaborate, and prolonged surgical operations. Now, "the fierce extremity of suffering has been steeped in the waters of oblivion, and the deepest furrow in the knotted brow of agony has been smoothed away forever." Who could possibly endure the torture of an operation lasting for one, two, or, it may be, even three hours, when every minute seems an eternity of agony? I would rather be the discoverer of anæsthesia than have won an Austerlitz or Waterloo.

The ideal anæsthetic has not yet been obtained. No one can fail to see that ether or chloroform, and also a few others which occasionally replace them, have very real dangers. The ideal anæsthetic will abolish pain by the abolition of consciousness, *but without danger to life.* That it will be found is as certain as that experiment and progress are our watchwords.

Antiseptic Surgery.—While the exact date of the revelation in surgery, due to anæsthesia, can be fixed, a later revolution in our surgical methods came in so gradually that one cannot name any special day, or even year, when it was introduced. But, while the day or year cannot be given, the one man, to whom this great revolution in modern surgery is due, is well known. The name of Lister, *primus inter pares*, is honored throughout the entire surgical world, and his recent distinction as the first medical peer of the United Kingdom is an honor conferred not upon Lord Lister alone, but upon the entire profession, and worthily marks a new departure in the recognition of medical science by the Queen.

So far as this country is concerned, the introduction of antiseptic surgery may be said to date from the visit of Mr. Lister to this same city of Brotherly Love at the Centennial International Congress of 1876. Derided at first as a "fad," or as "nothing more than surgical cleanliness," it has now won its way over the whole world. A few laggards in the surgical army there are who even yet do not practice modern antiseptic or aseptic surgery, but the overwhelming majority of the profession recognize that the world owes a debt to Lord Lister which no honor can pay. His service to humanity will never be forgotten, and probably never will be surpassed in its wide-reaching, beneficent influence.

As an outgrowth from the practical development of antiseptic surgery has arisen a wholly new science and a wholly new method of practice, which bid fair to revolutionize our modern therapeutics—*Bacteriology and Orrhotherapy.* These are so recent that it is dangorous to prophesy what may occur, but it is not venturing far to predict that fifty years from now we shall be able not only easily to convert infected into non-infected wounds, but that by some means as yet undiscovered we shall be able successfully to combat the infection and prevent the dire ravages of tuberculosis, of syphilis, of cancer, of sarcoma, and possibly even the occurrence of benign tumors. That will be, indeed, the golden age, when surgery will be robbed of nearly all its terrors, when a peaceful victory will abolish our present instruments and the majority of our present operations.

Animal Experimentation has had also a very large share in the development of modern surgery. The whole question of the introduction of animal ligatures was begun in America by Physick, who used buckskin, and his follower, Dorsey, who used kid and cut both ends short; Hartshorne, who used parchment, and Bellenger and Eve, the tendon of the deer, and has been solved principally by experiment upon animals in order to determine accurately the behavior of such ligatures in the tissues. Only professional readers can appreciate what a boon to humanity this single achievement has been. Modern cerebral surgery also owes its exactness and success almost wholly to cerebral localization and antisepsis, both of which were first studied by experiment upon animals, and later by the application of the knowledge so gained to man. *Bacteriology would not now exist as a science, nor would accurate modern surgery and a large part of modern medicine be possible had experiments upon animals been prohibited, as some zoophilus women, who love dogs better than men and women, and even little children, desire.*

One of the most striking departments, in which progress has been made, is in that of the nervous system. In this Mitchell, though not a surgeon, has suggested many surgical advances. South's dictum as to fractures of the skull is now violated with the happiest results, by almost every surgeon in the land. In addition to this, a very large number of tumors of the brain have been successfully removed, tumors which, before 1884, were considered as wholly outside the domain of surgery. To our English brethren, Godlee, Horsley, and Macewen, above all others, is due the credit of establishing cerebral surgery on a firm basis of right principles and successful technic.

In abscesses of the brain, we have a lesion which is still more amenable to treatment, and the number of recoveries now mounts even into the hundreds. Thanks to the otologist, we can now, by proper treatment, in many cases do better than operate on these abscesses—we can prevent them.

Tumors of the spine, since Mr. Horsley's brilliant paper in 1888, have been proved accessible to the modern surgeon. Though Abbé's division of the posterior nerve-roots, in cases of intractable neuralgia, has not been followed by all the success we could wish, it has proved that the operation is a practicable one.

Not only have accumulations within the pleura been evacuated, but Roberts was among

the pioneers in the operation of *paracentesis pericardii*, while the surgery of the lung is now only taking its first tentative steps. The pericardium has also been sutured, and even the heart itself has twice been sutured with one complete recovery. We were taught by the younger Gross that the great veins could be successfully tied, and the recent researches of Abbé and Murphy may open a new chapter in the surgery of the arteries by substituting suture for occlusion by the ligature.

The accessory organs in the abdomen have been conquered by the modern surgeon; fifty-seven tumors of the liver have been removed with a mortality as low as 13.5 per cent. The world owes to America the operation of *cholecystotomy*, since it was first done by Bobbs in 1868, and was popularized by the powerful influence of Sims in 1870. *Pancreatic cysts*, chiefly through the labors of Senn, are now amenable to treatment. The spleen has been extirpated many times.

The appendix, that meager but most troublesome ancestral vestige which, with the bicycle, has been the faithful friend of the surgeon through the past few years of commercial depression, has been recognized as the real origin of the so-frequent abscesses in the right iliac fossa. Beginning with Willard Parker's paper in 1867 and Fitz's memorable paper in 1886, the treatment of appendicitis and even its much-abused name as destinctly of American origin, and are an immense credit to American surgery.

Until Simon's classical experiments on dogs in 1870 (*Deut. Klinik*, xxii, 137), the kidney was a practically inaccessible organ, but now, when it wanders, we secure it by suture; when there is a stone in it, we open it fearlessly and remove the stone; when it is distended with pus or urine, we drain it; and if it is past hope of recovery, we extirpate it, all with most remarkable success. Even stones in the ureter or a divided ureter, Cabot, Fenger, Kelly, and Van Hook have shown us, can be dealt with successfully.

The surgery of the pelvic organs has, one may say, been created since 1847, but its triumphs are so many that time allows me only a word. Sims' treatment of vesico-vaginal fistula and his introduction of silver wire in 1852 was distinctly an American triumph.

A hasty review such as has been given by improvements in surgery within the last fifty years does much more than show us the adroitness, audacity, and success of the modern surgeon. That is the thing that strikes us most as surgeons, but we must regard all these improvements also from the side of the patient and the family, and see what it means. It means a prolongation of life by operations which, while not without pain and suffering during recovery, have been robbed of all their primary terrors by anesthesia, and most of their subsequent pain and suffering by antisepsis. It means that patients who, in 1847, were hopelessly consigned to the grave, after weeks and months of suffering, are now in the vast majority of cases, rescued fnom death. It means that the families formerly bereft of husband or wife, parent or child, and left to spend years of sorrow, of suffering, and, in many cases, of poverty, because the bread-winners were taken away, have now restored to them their loved ones, in health and strength and usefullness. It means that the hecatombs of a Cæsar, of an Alexander, a Napoleon, are offset by the beneficent labors of a Morton, a Warren, a Lister, who are, and who for all time will be, blessed by many a poor patient who never heard of them, instead of being cursed as the destroyers of nations and of homes innumerable. It means that man's inhumanity to man shall be replaced by a scientific and Christian altruism which sheds blessings and benefits on the whole human race, seeing in the patient, whether saint or sinner, only a human being who is suffering from accident or disease, whom it is the province of the surgeon, in imitation of Him who went about doing good, to restore to health and happiness. Even where life cannot be prolonged, the agonies of death itself can be soothed by his hand and his fruitful skill.

What the future has in store for us we can only dream. Two diametrically opposing tendencies are prominent in modern surgery: radical interference with disease, so there is scarcely now a single organ or portion of the body not within our reach; yet, on the other hand, a remarkably conservative tendency in cultivating remedial rather than radical surgery. Joints so diseased as once to require amputation are now treated conservatively with the best results. Ovaries, a portion of which can be preserved, are kept in the abdomen; kidneys once doomed to extirpation are now partially removed, and bones so diseased that they then required amputation are now excised and the limbs preserved. Experiments upon animals have recently given us wholly new views of infection and of the origin of many diseases, and also the little knowledge that we yet have as to either natural or acquired immunity, and to a consequent orrhotherapy.

It is, I believe, on these lines that our more

immediate future triumphs will be achieved. We have discovered the actual cause of tetanus, tuberculosis, erysipelas, suppuration, and a host of other diseases and conditions, of the cause of which we were wholly ignorant a few years ago. The cause of many other disorders, both medical and surgical, still remain hidden from our view. We know almost nothing of the origin of benign tumors, and are groping to discover the origin of cancer, sarcoma, and other malignant growths. When we have discovered the cause, we are nearly half way, or at least a long way on the road to the discovery of the cure, and I think it not unlikely that in 1947 your then orator will be able to point to the time when a definate knowledge of the causes of these diseases was attained and probably to a time when their cure was first instituted.

That will be a surgical paradise when we can lay aside the knife and by means of suitable toxins or antitoxins, drugs, or other methods of treatment, control inflammation, arrest suppuration, stay the ravages of tuberculosis, or of syphilis, abort or disperse tumors, cure cancer, and it may be, so prolong human life that all of his then audience will die either of accident or of old age. Would that you and I could be able to live in 1947 to join in the glorious surgical Te Deum!

Correspondence.

Opinions on Puerperal Septicæmia—Its Causes and Treatment.

Mr. Editor,—Dr. Guerin, in discussions before the Academy of Paris from 1858 to 1868, considered (Vol. I, *Epitome to Braithwaite*) the uterus after the expulsion of the placenta as an open wound, *subject* to the absorption of the discharges, such as fluid blood, coagulated blood, lochia, etc., which, being retained in the cavity of the puerperal uterus, easily set up putrefaction. Being reabsorbed by the open vessels, fever originates at once. After the expulsion of the child, the first thing to be done is to secure the contraction of the uterus by ergot; secondly, remove the discharges, and thirdly, use antiseptic injections. These are the views of the faculty in Italy, Belgium and Germany; and Dr. Campbell adds that, since adopting this plan, there has not been a single case of septicæmia. This poison, introduced in the wards of a hospital, attacks far and near. Dr. Kendrem himself has informed us that he suffered from the effects of the same poison (*Copied from the Virginia Medical Monthly*).

Dr. Schrœder (Vol. II, p. 278) stated before the Berlin Gynæcological Society that puerperal fever should principally be treated locally. As in surgery, the chief fact is disinfection. The knowing when to disinfect resolves itself in every case to consider the womb infected and not wait till fever sets up.

Epitome, Vol. IV, p. 128, Dr. Lowe, in *Edinburg Medical Journal*: "I am strongly of opinion that by early and repeated aseptic intra-uterine injections, a rapidly acting cholagogue, washing out the bladder, if necessary, with some aseptic solution, and the timely and liberal use of stimulants, will avert death in many instances. It is no use giving the nurse instructions to wash out the uterus; we must do so ourselves by a long tube in the uterine cavity. Ammonia and brandy I regard as the medicines for the disease; brandy is good.

To use carbolic spray and irrigation of the uterus and vagina with carbolic solution immediately after labor are considered important means for the prevention of puerperal septic poisoning."

Dr. Hatran Ford, *Epitome*, Vol. V, p. 396: Defective uterine contraction after labor must be acknowledged as a cause of metritis, phlebitis, lymphangitis, emboli, and pyemia, wholly independent of any septic influences in a number of cases not very large. This defective contraction, on the other hand, is one of the strongest predisposing conditions of the diseases named in presence of lochial septicity or under the influence of septicæmia.

Septicity of the lochial discharge is the prime cause of puerperal septicæmia and in the very great majority of cases of all the forms of local and general post-partum disease. Puerperal septicæmia may originate from within or without. Under no condition is any one justified in approaching a parturient woman while attending upon a case of puerperal fever, septicæmia, or erysipelas.

If discharges are putrid, antiseptic injections of permanganate of potash or 2 per cent. of carbolic acid may be given every two hours, or even every hour. Dr. Fordyce Barker objects to carbolic acid injections. Cleanliness is the most important matter, and frequent cleansings with warm water alone is often sufficient, by antiseptic and disinfectant, and other harmless agents, as permanganate potash, chloride of sodium, bromo-chloralum, etc.

Dr. Geo. T. Harrison, of New York, before the Medical Society of Virginia (*Epitome*, Vol. VI, p. 529): Disinfecting medicines should be ap-

plied to instruments, hands, etc., of doctor and nurse after labor, and thoroughly disinfect the genital tract by intra uterine injections of carbolic acid or mercuric bichloride. Wash the external genitals three or four times a day.

In Vol. VII, p. 407, Dr. Currie's report on obstetrics on the antiseptic methods in French hospitals favors cutaneous irrigation in the treatment of puerperal infection as rational and antiseptic. In Russia the same treatment is considered both practicable and safe.

Dr. Cecil, Louisville Hospital: "The vaginal douche is the safest and most efficient method. In my own hands, and in that of many others, the invariable use of antiseptic vaginal irrigation in hospital practice has been followed by most excellent results. The custom of late in the lying-in wards of the Louisville City Hospital has been to give a vaginal injection twice or three times daily until the fifth day is passed. A statistical comparison of the prevalence and mortality of puerperal diseases before and since its adoption is very gratifying (page 556, *Northwestern Lancet*, editorial).

"So great has been the success of this method that during the last year there was one death from child-bed fever, and in that case, it was considered, the treatment was begun too late. There have been no bad results under this treatment of eighty-four cases. When I look back for thirty years, I have seen numbers of valuable lives sacrificed by bad treatment (Practice of Prof. Browne, of Vienna).

Dr. Parrish, in *Cin. Med. Jour.* (*Epitome*, Vol. II, p. 428), on Contagion of Erysipelas, etc., says: "The relation between erysipelas which tracks the surgeon and puerperal fever or septicæmia must be considered. If a parturient patient is in close proximity to a case of diphtheria, she is liable to contract the disease; but instead of the throat lesions occurring, a most extensive deposit may occur on the genitals, and a fatal termination follows. These are facts from a large clinical experience."

Dr. Hurlburt, St. Louis Hospital, in Vol. IX, *Epitome*, p. 87: The practice should be as follows: "A thorough delivery of the clots by the hand and washing out with hot antiseptic intra-uterine douche combined with manipulation; then ergot in full doses."

Dr. Lawrence, ed. *Medical Brief*, 1894: If you have any puerperal fever, go after it with hot aseptic injections, persistently and repeatedly repeated, turpentine and hot cloths to the abdomen, and chlorate potash internally. It has a peculiar affinity for the uterus and the remedy par excellence for septic puerperal fever."

Before the N. Y. Obstetrical Society, Dr. Munde said that in cases of infection he found that the body of the uterus had not contracted well, and that coagula had adhered to the rough placental site and became decomposed, or a localized point starting the infection.

Dr. Ashfield reports 2,000 labors from 1884 to 1891 in the Marburg Maternité, and says the causes of fever are often obscure, but since cleanliness has become observed, there has been much less disease.

Dr. Ashby had not seen a single case of puerperal disease in which he did not find an old laceration. 1891.

Dr. Rawley Martin reports a case (Medical Society of Virginia *Transactions*, 1892,) of primapara. There was, in spite of precautions to prevent, laceration of cervix and perineum, followed by fever. Intra-uterine injections were chiefly used; pulse 160 and temperature $105\frac{3}{5}°$, showing it a bad case; respiration 40; lochia suppressed and vomiting. Iodoform was applied to the cervix. Intra-uterine irrigations were continued even after the fever was stopped. This was a clear case of sepsis, and the good effects of the bichloride mercury irrigation was thoroughly demonstrated. A second case of abortion, with placenta not only delivered in part. With speculum and blunt curette he removed the remains of the placenta, irrigated the uterus before, and iodoform locally. A vaginal douche of hot water was ordered twice daily, and recovery without accident.

I had a similar case in 1895, with similar treatment and recovery. He says, moreover, which is the experience of most old physicians all over the world: "I do not have much puerperal fever to treat; with but little local treatment, and relying principally on internal treatment, I lost most of my cases. All that I have treated with the improved method so far have recovered."

Dr. Pryor, of the N. Y. Polyclinic, said at the same time: "After cleasing the genitals, I wash out the uterus with bichloride mercury 1:400 at a temperature of 110°. If the temperature does not fall, I repeat the injections every two hours, and should be continued for some days with weaker solutions, 1:10000, until shreds of tissue pass. There is no note of water entering the tubes. Will also add, do not use morphia for pain, and antipyretics are of little value, for the reduction of fever only prevents an accurate estimate of the benefit that is being derived from the local treatment.

In the *Transactions* of the Medical Society of Virginia, 1895, there is an interesting

case reported. The placenta came way of itself without manual interference, and followed by hæmorrhage, which was checked. A week afterward septicæmia was noticed, internal and local treatment adopted, but, after several improvements and relapses, patient finally died. He thinks that hæmorrhages are often due to lacerations overlooked by physicians.

Dr. Michaux thought the use of the sharp curette increased the entrees for infection.

One doctor reported a death from sharp curetting. This may have been, but there is doubt whether the fever may not have arisen with or without the curette.

Dr. Nash (New York): There is no doubt that outside of maternities the cause of death and disease is often the want of disinfection. In hospitals the mortality from this cause is under four cases in a thousand, among the filthiest and most degraded; and yet, among the wealthiest in private practice, the mortality is much greater—one woman in eighty-nine dying.

Puerperal Drainage.—Dr. J. J. Mulberon, in *Therapy* (*Medical Brief*, 1895, p. 516), says: "A desideratum of good surgery is perfect drainage, and if the woman who has been delivered of a child is to be treated as if she was a surgical case, which I hold she should be, the seat of injury must be sufficiently drained. One reason of the immunity of females of the lower animals from puerperal infection probably lies in the position favorable to drainage which they assume during their puerperium. Imagine a cow, for instance, strapped for ten days on its back and not allowed to assume the prone position, even to evacuate the bladder or rectum. When we recall the practice of former (and very recent) days of keeping the poor woman absolutely on her back, and permitting her to urinate and defecate only into a bed-pan, and not douching her vagina, we can only wonder that septicæmia was not a more frequent occurrence than it actually was. With the woman on her back, the discharge cannot properly escape from the vagina, where, under the influence of the body heat, it is in favorable condition for decomposition. Good drainage can be secured by having the woman lie in the semi-prone position, or Sims' position. This position is also a very restful one, and permits the enlarged uterus to retains its normal position of anteversion. With a further view of good drainage, have the woman from the very first sit erect on the chamber vessel when she has a passage of either urine or feces. I have not permitted the use of a bed-pan for ten years, and have never encountered any of the dreaded results which some fear if the woman is not kept strictly in the recumbent position."

Med. Brief, 1894, p. 143: In a puerperal case, go after it with hot aseptic injections, persistently and frequently repeated.

Brief, 1896, p. 798: Use hot intra-vaginal injections every six or eight hours.

Dr. Smith, of Dixon, Ky., in *Med. World*, 1894, p. 442: Vaginal douches add to the comfort of the patient, and if there are abrasions or lacerations, it does a great deal to prevent infection.

Dr. Cline, of Woodstock, took away a retained placenta and used one of Seiler's tablets as a douche every four hours.

Dr. Paulus Irving, of Richmond, Va., considers post-partum hæmorrhage as a danger signal.

Dr. Pryor, of New Jersey: "If the temperature does not fall, use an injection every two hours, and if severely septic, by constant irrigation."

Dr. Kliakoff, in the *French Military Journal* (*Brief*, 1897, p. 606), uses a constant irrigation with solutions of carbolic acid. or 1 per cent. of permanganate potash. Had twenty-eight cases of fever, and one only fatal from being delayed three weeks after labor before commencing treatment.

Ed. of *Weekly Medical Review:* The douche is cleanly and agreeable to the patient, lessens the discharge and prevents odor, and no woman who has once used the uterine injection will go through her confinement without them.

Dr. George T. Harrison, New York: Thoroughly disinfect with intra-uterine injections of carbolic acid, and wash the external organs three or four times a day. *Epitome.* Vol. VI, p. 529.

All obstetricians have come to the same conclusions, and there is safety in cleanliness, and all preventives are dangerous and should not be used.

C. R. Cullen, M. D.

Gaines Mill, Va., June 1st, 1897.

Menthol for Vomiting of Pregnancy.

According to the *Pittsburg Med. Review*, May, 1897, the *Maryland Med. Jour.* says that Dr. Weil states in *Practitioner* [what issues?] that *every form of vomiting during gestation* can be relieved by a 20 per cent. solution of menthol in olive oil. Dose, ten drops on sugar whenever nausea appears.

Proceedings of Societies, etc.

AMERICAN MEDICAL ASSOCIATION.

The forty-eighth annual meeting was held in Philadelphia June 1st–4th, 1897, inclusive. Dr. Nicholas Senn, of Chicago, President, and Dr. Wm. Atkinson, Philadelphia, Secretary, in their places.

Addresses of welcome were delivered by the Mayor of Philadelphia, the Hon. Charles F. Warwick, and by the Hon. Charles Emory Smith for Governor Hastings on the part of the State—the Governor being detained by duties in Harrisburg.

The President's Address, by Dr. Senn, related to "The American Medical Association—Its Past, Its Present, and Its Future." It is especially appropriate to hold this semi-centennial session in Philadelphia—the birth place of the Association just fifty years ago—whose citizens, beginning with Benjamin Rush, one of the signers of the Declaration of Independence, had always been loyal to the cause of medicine, and which city has so long remained the centre of medical education. Drs. N. S. Davis, of Chicago, Alfred Stillé, of Philadelphia, J. B. Johnson, of St. Louis, and D. F. Atwalter, of Springfield, Mass., are perhaps the only surviving men who were most helpful in laying the corner-stone of this National Association.

Among reforms brought about by this Association, he remarked that nearly all medical schools now require a four years' course and an attendance of eight months in the year. This reform places our medical schools on a par with those of the old world. He predicted that within twenty-five years more, this country would become the centre of medical education; and that, instead of going to Europe to complete medical education, European students would be forced to come to America to perfect themselves in the science and art of medicine. While polyclinics and post-graduate medical schools were doing excellent work, they never could or would take the place of medical societies. One who had been living out of reach with his fellows might be benefited by attending these polyclinics; but rational post-graduate work consists in reading current medical literature, in mastering modern text-books in the use of the microscope, in interpreting disease from a bacteriologic standpoint, and in regular attendance of the meetings of *medical societies*—local, State and national. So that every recent graduate should affiliate with medical societies. The two apparent dangers of medical societies now are, 1. Too many societies; and, 2. Too many papers. The organization of district and sectional medical societies he thinks of questionable utility, as they tend to detract from local, State and the national associations. Political doctors, wire pullers, etc., who seldom read papers or take part in scientific discussions, are the worries of medical societies. The young graduate should listen and say little in his local society for a year or two; in five years he was ready for service in his State society; and when he had ten or twelve years of experience, if he has something valuable to say, he was ready to take part in the national association. All physicians should attend their societies solely to receive or impart information. Dr. Senn urged the creation of a fund for prize essays. He urged the contribution of funds sufficient to erect the Rush monument. He suggested that during the meetings of the Association, lectures should be given on bacteriology, histology, etc., illustrated fully. He thought that there should be an Association dinner each session, to be paid for by the members who participate. He thinks there is need of a permanent home for the Association, an editorial office, press-room, a circulating library, etc. The *Journal* of the Association has passed the trial stage and will some day rival the *British Medical Journal.*

Dr. A. L. Gihon, for the Committee on the *Rush Monument Fund*, reported that, while the mass of the regular profession in America had succeeded in twelve years in raising only $4,000, the small body of homœopaths in this country had in four years raised $75,000 and erected a monument to Hahnemann. The report stirred up the members, and $2,000 were at once subscribed, and promises of much more from various States, etc.

An Executive Council of five, consisting of three officers of the Executive Committee and two officers to be elected, was decided on, which shall transact the duties commonly assigned to the Executive Committee during the intervals between the meetings. One of the five Councilmen shall belong to the Section on Practice and one to the Section on Surgery and Anatomy.

A further amendment to the Constitution adopted reads: "Any State or local medical society, or other organized institution, whose rules, regulations and code of ethics agree in principle with those of this Association, may be entitled to representation on the advice or agreement of the judicial council."

During the Second Day, an invitation from the Atlantic City (New Jersey) Medical Society

was received to become their guests on Saturday, June 5th.

The Address in Medicine was delivered by Dr. Austin Flint, of New York. Never, since medicine became a science, has medical history been made so fast as now. He hoped to see, in early years of the second half century of this Association, a more complete unity of the profession through its authority and influence. Uniformity of legal qualifications to practice medicine in different States could best be secured by making every State Society actually, as well as nominally, a branch of the American Medical Association, with permanent committees from each State organization to constitute a central legislative body, the object of which should be to secure uniform medical laws in all the States, making any State license valid for all, and a matriculation certificate for one State good for matriculation in all schools represented in the Association of American Medical Colleges. The remainder of his address related to *Stercorin and Cholesteræmia* (an abstract of which appears in this issue, in common with other journals).

The report of the Executive Committee showed that *about* 2,000 *members were in attendance* upon this session—the largest number ever recorded as present at any one meeting.

To expedite registration of members at future sessions, it was resolved that the Secretary of the Association be constituted a committee of one to conduct in the city where a meeting is to be held, for three days prior to the commencement of the meeting, a bureau of registration for the attending delegates, for which services he is to receive $100 annually.

President McKinley and Governor Hastings were introduced; made brief congratulatory addresses, and were cheered to the echo.

Protest against anti-vivisection legislation.—Dr. Horatio C. Wood, of Philadelphia, introduced a resolution, unanimously adopted, protesting against the passage by Congress of Senate bill, No. 1,061, intended to prevent vivisection in the District of Columbia.

Third Day.—A resolution recommending the formation of a *National Medical Aid Association* was, on motion, referred to a committee of one from each State to establish such an association.

The Board of Trustees was directed to secure a charter, so that the association may legally sue or be sued. There was a cash balance of $7,160 in the treasury. It was recommended that no change in *The Journal* office from Chicago be made. A tribute was paid the editorial staff.

Jubilee Proceedings.—After the Address in Surgery by Dr. W. W. Keen (see page —), Dr. N. S Davis, of Chicago—the founder of the association—made an address on the *Origin and History of the American Medical Association.*

Dr. Geo. Ben. Johnston, of Richmond, President Medical Society of Virginia, spoke for the Presidents of the State Medical Societies. Today, every State had its Medical Society, modelled after the same general plan, and with common purposes in view. Through these Societies there are annually made scores of valuable contributions—these Societies thus acting as great educators, producing and diffusing useful knowledge. A valuable result of legislation begun by these State Societies is the establishment of State Boards of Examiners in nearly every State. By legislation secured through these Societies, the self-constituted and empiric are fast passing away, and their places are being filled by educated, competent and intelligent doctors. Careless and inferior schools soon saw their graduates excluded by the State Boards of Examiners from the privilege of practice, and their classes diminished—the effect of which has been the elevation of the standard of medical education. The National Confederation of State Medical and Licensing Boards was a natural outgrowth; and this confederation must become the leader in uniform laws regulating the practice of medicine. Through State Societies also, State Boards of Health had been established, and are of inestimable value to the public in promulgating hygienic laws in the prevention and suppression of epidemics, and in the conduct of commerce in times of pestilential danger.

Dr. Wm. Perry Watson, of New Jersey, followed with an address on *State Boards of Medical Examiners: What they have done; how they should be made up, and what they should do.*

Officers, etc., elected for 1897-8: *President*—Dr. Geo. M. Sternberg, Surg.-Gen. U. S. Navy, Washington, D. C.

Vice-Presidents—Drs. Joseph M. Matthews, Louisville, Ky.; J. L. Thompson, Indianapolis, Ind.; F. H. Wiggin, New York; T. J. Happell, Nashville, Tenn.

Secretary—Dr. Wm. B. Atkinson, Philadelphia, Pa.

Treasurer—Dr. H. P. Newman, Chicago, Ill.

Librarian—Dr. Geo. W. Webster, Chicago, Ill.

Board of Trustees—terms to expire 1900: Drs. Joseph Eastman, Indianapolis; J. F. Priestley, ——, Iowa, and Truman W. Miller, ——, Ill.

Judicial Council—terms to expire 1900: All former members re-elected.

To deliver Address on Medicine, 1898—Dr. J. H. Masser, Philadelphia, Pa.

Address on Surgery, 1898—Dr. Sohn B. Murphy, Chicago, Ill.

Address on State Medicine, 1898—Dr. Samuel C. Busey, Washington, D. C.

Place of Meeting, May, 1898—Denver, Colorado. Chairman of Committee of Arrangements, Dr. J. W. Graham, Denver.

Resolutions of sorrow were adopted because of the death of Dr. Jerome Cochran, late Health Officer of Alabama.

Fourth Day.—Delegates to International Medical Congress at Moscow, August, 1897, were elected.

The Address on State Medicine was delivered by Dr. John B. Hamilton, his subject being mostly limited to *The Prevention of Tuberculosis.*

Resolutions of thanks were voted the Philadelphia doctors and citizens generally for their contribution to the most uniformly successful session of the Association.

After introducing the President-elect, Dr. Sternberg, the session adjourned *sine die.*

Among Exhibitors who contributed to the interest of visitors to the Exhibition Hall we may especially mention Messrs. Parke, Davis & Co., whose display of antitoxins, etc., was especially interesting.

Messrs. Sharp & Dohme distributed samples of hypodermic tablets put up in cases convenient for the vest pocket.

Messrs. Charles Lentz & Sons had about the best line of surgical instruments, etc., on exhibition.

Henry Pharmacal Co. were well represented. Their preparations of "three-chlorides," "triiodides," etc., are popular wherever known.

The Globe Manufacturing Co.'s representative entertained the doctors by exhibiting the workings of the "universal multi-nebular vaporizer for office use.

Canton Surgical and Dental Chair Co. showed the workings of their chair.

New York Pharmaceutical Co. had portion of a table, but the samples of Hayden's viburnum compound did not reach the Hall in time.

Messrs. McKesson & Robbins had on exhibition many of their specialties.

The Arlington Chemical Co.'s "liquid peptonoids" are becoming every-day prescriptions of all doctors.

Mr. Charles Marchand's samples of hydrogen, glycozone, etc., were taken "like hot cakes."

Messrs. John Carle & Sons' "Imperial Granum" and "bedside records" were popular.

Analyses, Selections, etc.

Technique of Staining Blood for Microscopical Examination with Ehrlich's Tri-A id Solution.

Dr. Arthur Jordan, Richmond, Va. (*Medical Record*, June 5, 1897), gives the following technique on this subject, which he recommends to practicing physicians on account of the ease with which it may be employed in every-day practice, viz:

First. The cleansing of the cover glass.

Second. The preparation of the lobe of the ear.

Third. The securing of the specimen.

Fourth. Allowing it to dry in the air.

Fifth. The fixation of the specimen.

Sixth. The staining of the same.

First, as to the cleansing of the cover glasses. I usually prepare enough to make from fifteen to twenty specimens—*i. e.*, from thirty to forty covers. I wash them first with ether and then with alcohol, using for this purpose an old clean linen handkerchief. After they have been well cleansed in this way, they are put upon a clean piece of writing-paper or a prescription blank. Care should be taken not to handle them with the fingers after they have been made ready for use. If this precaution is neglected, it will be found that the staining fluid will not spread evenly and uniformly over them.

Second, I usually prefer the lobe of the ear, especially when my patient is a woman. It is less sensitive than are the fingers, its integument is thinner, and the patient is spared the sight of blood. The lobe or lobule is first thoroughly cleansed with ether and then with alcohol. I use considerable friction with the old handkerchief during this process, with the view of causing a local hyperæmia. The lobule is then pricked about its centre, sufficiently deep, with an ordinary pocket lancet made aseptic by passing it through the flame of a Bunsen burner or that of an alcohol lamp several times, to cause the blood to well up and form a good-sized drop. No pressure should be used to make an increase in the flow of the blood, for such a procedure causes the corpuscles to become irregular in their shape. Of course, the index finger can be prepared in the way I have indicated and the blood obtained from it, constriction having been applied to its proximal end prior to the puncture.

Now we are ready to secure the specimen of blood. A cover glass is carried from the paper to the lobe of the ear by means of a small pair of tweezers. It is placed lightly upon the drop

of blood, and when withdrawn carries with it a considerable portion of the blood. This cover glass is then grasped diagonally on its corners between the thumb and index finger of the operator's left hand, with the drop of blood upward. A second cover glass is then placed upon the first with the tweezers in such a way that it is square to the thumb and index finger. This arrangement allows them to be drawn apart easily. They are then pressed together between the thumb and index finger of the operator's right hand. Finally, they are to be drawn apart by a rapid sliding motion from left to right, not by raising the upper one from the lower. The other specimens are obtained in like manner. To secure a good specimen by this plan will necessitate both care and practice, but with a little patience any one can secure a fairly good one in a very short time. It is at this point of the process that an artificial poikilocytosis is often produced. This should be borne in mind and taken into consideration in examining the cover. It is not very marked at any time, and the operator will find that it disappears in direct proportion as he gains experience and dexterity in manipulating the covers. The blood-stained sides of the cover glasses are turned up, placed upon the paper, and allowed to dry in the air. The time required for this is not long. By the time that all the covers have been smeared with blood, those made in the beginning will be quite ready for the fixation process. Working moderately fast, no time may be lost from the beginning of securing the specimen until it is ready for the microscope. This part of the technique will have consumed from three to five minutes.

The specimen may be fixed in either of two ways, both of which have given me uniformly good results. First, by equal parts of ether and alcohol. If the operator has the time and can wait on this method, I believe that it will give as good results as that obtained by heat. I allow the specimens to remain in this mixture of alcohol and ether from twenty to thirty minutes. This length of time I have found to be quite sufficient However, some authors advise that they be left in the mixture for two hours and upward. I have never found it necessary to take so long a time, and I am of the opinion that a half hour is enough for all practical purposes. It might be well to add that the limits of time having been given as a guide, the operator may investigate the matter for himself. The second method is that by heat. This method has rapidity to recommend it, and indeed the material difference between the two methods, as I have come to observe, is a question of time, the former requiring more than the latter. I generally use a small oven about six inches square. It is very simple in structure, and can be easily and cheaply made. It is made of copper and has a central shelf in its interior, upon which are placed the covers. At the back there is attached a metal ring, fitted with a thumb screw, which, sliding upon a rod intended to support the oven, enables the operator to secure any desired distance from the flame. The thermometer is attached to the top. The door may be either sliding or hinged. The heat may be furnished by an alcohol lamp or by a Bunsen burner. The heat is gradually increased until the temperature reaches 120° C. (248° F.) and remains there for a few moments. The temperature must not pass beyond 120° C. After allowing the ether and alcohol mixture to evaporate from the covers or letting them gradually cool, according to which method has been used, they are then ready to be stained. Ehrlich's tri-acid staining fluid may be prepared according to the following formulæ:

Saturated watery solution of orange G...	125
Concentrated watery solution of acid fuchsin, containing a 20 per cent. solution of alcohol...	125

These are mixed, and then is added:

Absolute alcohol...	75
Saturated watery solution of methyl green...	125

Or,

Saturated solution of orange G...	50 cm.
Saturated solution of acid fuchsin...	60 cm.
Saturated solution of methyl green...	75 cm.
Distilled water...	100 cm.
Absolute alcohol...	50 cm.
Glycerin...	15 cm.

These several ingredients are to be thoroughly mixed and allowed to stand fourteen days before using. A thick sediment forms at the bottom of the bottle, which should not be disturbed or shaken.

A few words about making the saturated solutions of the three coloring materials are necessary. I prefer using Grübler's stains, for they give me better results. Three four-ounce bottles are filled with distilled water and a small quantity of orange G. is put in bottle No. 1, a small quantity of acid fuchsin in No. 2, and a small quantity of methyl green in No. 3. As soon as the water has taken up the stain, an additional quantity of staining material is added, and this process is continued until a deposit begins to form upon the bottom of the bottles, indicating that the solution has

become saturated. After they have become saturated, they are allowed to stand for four days, and the solutions are not to be filtered. When the tri-acid solution is to be made, care must be used not to shake bottles Nos. 1, 2 and 3. Close attention to small details will be properly rewarded.

When used, this preparation stains the hæmoglobin yellow, the nuclei green, the losinophile granulations deep dark gray, the neutrophile granulations intense violet. The hæmoglobin is colored by the orange G., the acidophile granulations by the acid fuchsin, the nuclei by the methyl green, and the neutrophile granulations by the acid fuchsin and methyl green. From this it may be seen that if any particular part of the cell is not stained sufficiently, that special stain can be increased. The quantity of staining fluid made by the last formula will last an ordinary lifetime, for it does not become impaired by age.

The covers are stained with this fluid by passing over them a glass rod which has been previously passed into the centre of the bottle. After allowing them to dry, they may be examined either dry or mounted in balsam. I prefer the former method, but believe that the beginner will secure better results by mounting in balsam. I have used this method of staining for two years, and find that it gives better results than any other which I have tried. From the time that the first specimen is begun until it is ready for the microscope, fixation by heat will require from ten to fifteen minutes.

In concluding, it may be well to observe that blood mounted in this way may be sent by mail or express to a hæmatologist for examinations under the microscope without injuring the cells.

External Application for Pruritus.

The aggravating itching of the skin in various parts of the body, of which many patients complain—a condition often unassociated with any discoverable pathological state—can with almost absolute certainty be relieved with an ointment as follows:

℞—Mentholis .... gm. 120 (gr. 11)
Adipis lanæ hydrosi... gm. 15 (ʒss)
Adipis benzoninati.... gm. 15 (ʒss)

This gives almost instant relief. The menthol, in addition to its anæsthetic action, also possesses germicidal action, and both of these are probably brought into play. Where an oily base is objectionable, alcohol may be used. —*Pittsburg Med. Rev.*, May, 1897.

Book Notices.

System of Medicine by Many Writers. *Edited by* THOMAS CLIFFORD ALLBUTT, M. A., M. D., LL. D., F. R. C. P., Regius Professor of Physic in University of Cambridge, etc. *Volume II.* New York: The Macmillan Company. London: Macmillan & Co., Ltd. 1897. Large 8vo. Pp. 1167. Cloth, $5, or $20 for the four volumes.

This Vol. II of the *System* relates to "Infective Diseases and Toxicology"—typhoid fever, however, having been discussed in Vol. I. A valuable addendum to the typhoid fever chapter consists in a section in Vol. II on the "Serodiagnosis of typhoid fever," giving Widal's test method in detail. With the exception of typhoid fever, this volume treats of (1), "infective diseases of chronic course;" (2), "diseases of uncertain bacteriology; (*a*), not endemic, and (*b*), topical or endemic;" (3), "infective diseases communicable from animals to man (*a*), of certain bacteriology, and (*b*), of uncertain bacteriology;" (4), "Diseases due to protozoa;" (5), "Intoxications," and (6), "Internal parasites." Of the chronic infective diseases discussed tuberculosis is by far the most important, and covers 39 pages; but scarcely seven lines are devoted to the treatment. The author, Dr. Sidney Martin, Assistant Physician Brompton Hospital, summarily dismisses this sub-section with the remark that "Nothing has yet been discovered to counteract the invasion of the tissues by the bacillus tuberculosis," as if he were perfectly ignorant of the results of anti-tubercle serum, of Paquin, and others. If an agent has not already been discovered which oftentimes has the appearance of contracting the invasion of the tissues by the bacillus tuberculosis, it is scarcely too much to say that we are on the threshhold of such a discovery. While the writer speaks of calcification and fibrosis as the two modes by which tubercle heals, he ventures on no suggestion to bring about either of these results, or any other result conducive to the longevity or relief, if not the cure of the tubercular patient; and such an omission in the present state of therapeusis is a very serious drawback to the value of the article for practitioners.

Space does not permit notice of other articles, but we may say that they are, as a rule, first rate. For instance, the section on the diagnosis of small-pox is the best presentation of that phase of the subject that we have anywhere seen. The section on the "Co-existence of infectious diseases" is also good. Interest-

ing descriptions are given of several diseases which do not prevail in this country. Dr. Wm. Osler, of Johns Hopkins Hospital, contributes the illustrated paper of 21 pages on *Malarial Fever*. Thirty pages are given by Mr. Charles James Martin and Dr. Calmette, on "Snake-poison and Snake-bite," which must prove of special value to country doctors. The book is worth much more than its advertised price of $5 per volume.

Editorial.

Medical Practice Laws of Various States.

We desire in the near future to give in fuller detail the requirements of each of the States for applicants to practice medicine, etc., in them. As best we can compile a report from our various exchanges, etc., the following States have laws on the subject.

Alabama—Each county has a Board of Examiners, elected by the County Medical Society. An applicant for practice in the State, if a graduate of a reputable college, must appear for examination before the Examining Board of the county in which he proposes to locate. If his examination is satisfactory, he receives a certificate entitling him to practice. If he then moves from one county to another in the State, the certificate of satisfactory examination is sufficient to let him register in the county into which he moves. Then there is a *State* Board before which those who fail before a County Board may appear for examination. If then satisfactory, a certificate to practice is granted. All non-graduates have to appear before the State Board for examination. The State Board is nominated for Commission by the Governor by the Counsellors of the Alabama State Medical Association, which represents altogether the Regular School of practice. Examinations are held in the usual department of medicine. This is the only State that has such a law.

Alaska has no Examining Board. There is no law as to who shall practice medicine.

Arizona has no State Board. Any one can practice in this State.

Arkansas has a State Board, and it is their duty to examine any one who has not the diploma of a recognized medical school.

California has no State Board, but requires of each applicant wishing to practice medicine in that State that he shall register his diploma as the graduate of a recognized medical college.

Cherokee Nation has a Medical Examining Board. Graduates and non-graduates go before this Board on the same footing.

Choctaw Nation has a Board of Medical Examiners that requires the applicant either to register his diploma as a graduate of a reputable medical college, or else he must pass an examination before this Board.

Colorado has a State Board of Examiners composed of six regular practitioners, two Homœopaths, and one Eclectic—all appointed by the Governor. Examinations are required of the non-graduates only. The holding of a diploma from a recognized College of Medicine is sufficient for registration.

Connecticut has three State Boards of Examiners, each appointed by the Governor—representing respectively the Regular, the Homœopathic and the Eclectic Schools of practice. Graduates of a recognized college of either school are required only to register their diplomas before the Board of the School of Practice to which his diploma points. Non-graduates only are required to stand examinations on the usual departments required by the Board representing that school which the applicant may elect.

Delaware has two State Boards of Examiners—a Regular and a Homœopathic—each appointed by the Governor. *Non-graduates are not allowed to appear for examination.* Diploma from a recognized College is required of each applicant for examination by either Board.

District of Columbia has just succeeded in getting an Examining Board. All applicants for examination must be graduates of recognized schools.

Florida has two State Boards of Examiners—Regular and Homœopathic. Both of these Boards require applicants to pass examinations. Non-graduates are allowed to come up.

Georgia has three State Boards of Examiners—representing respectively the Regular, the Homœopathic and the Eclectic Schools of practice—each appointed by the Governor. *Non-graduates are not allowed to appear for examination.* Diploma from a recognized college that required not less than three years of study is demanded of each applicant for examination by either Board.

Idaho has one State Board—composed of three doctors representing the Regular School, two the Eclectics, and one the Homœopathic—appointed by the Governor. Diplomas are not recognized as entitling to practice. All

future applicants to practice in the State must stand examination before the Board. License fee, $5.00. The Board may refuse license for unprofessional, criminal, immoral or dishonorable conduct.

Illinois has a State Board, but does not examine graduates from recognized Medical Colleges—their diplomas being sufficient. *Non-graduates, however*, are examined

Indiana has a State Board of Medical Examiners, consisting of five members, at least one of whom shall represent one of the four schools of practice—regular, homœopathic, eclectic, and physio-medical. The Board requires of those who are seeking to practice medicine and surgery in that State, that they must register their diplomas as graduates of a recognized medical college; otherwise, they must pass a creditable examination before that Board.

Indian Territory has an Examining Board that requires each candidate—graduate and non-graduate—to pass an examination before issuing a license to practice medicine.

Iowa has a State Board, which requires an examination of the applicant, unless he holds the diploma of a reputable medical college, in which case he is exempted by the Board.

Kansas has no State Board. The laws of this State allow almost any one to practice medicine.

Kentucky has no State Board, but only those who are graduates from recognized schools, and whose diplomas are approved by the State Board of Health, are allowed to practice there.

Louisiana has two State Boards of Examiners—Regular and Homœopathic—each appointed by the Governor. Before applying, each applicant for examination must have a diploma from a recognized school.

Maine has a State Board appointed by the governor. An examination by this Board is required, as a diploma is not sufficient.

Maryland has two State Boards of Medical Examiners—a Regular and a Homœopathic. Non-graduates are not allowed to come up for examination. Diplomas from recognized medical colleges are required of applicants by both Boards.

Massachusetts has a State Board appointed by the Governor. Each applicant must pass an examination before this Board, unless he registers his diploma as a graduate from a reputable medical college.

Michigan has no State Board. Practically any one can practice medicine there.

Minnesota has a State Board of Medical Examiners, which is appointed by the Governor. Each applicant for examination must hold the diploma of a recognized medical school.

Mississippi has an Examining Board, composed of members of the State Board of Health. It is not necessary to hold a diploma to apply for examination.

Missouri has no State Board. It is required, however, of each person applying for a license that he must register his diploma as a graduate of a recognized medical school.

Montana has a State Board, appointed by the Governor. Each applicant for examination must have a diploma from a reputable medical school.

Nebraska has no Examining Board, but the State Board of Health can recognize diplomas only from Medical Schools which require a preliminary entrance examination, or the equivalent thereof, and attendance upon at least four annual courses of lectures of not less than six months each (no two within the same year), before granting the degree.

Nevada has no Examining Board. Any one can practice medicine.

New Hampshire has a State Board. Each applicant for examination must hold the diploma of a recognized College.

New Jersey has a State Board. Any one passing their examinations may practice.

New Mexico has an Examining Board, but any one holding the diploma of a recognized school is not examined.

New York has three State Medical Examining Boards—Regular, Homœopathic, and Eclectic. Each applicant for examination must have a diploma from a school requiring three or more years.

North Carolina has a State Board of Examiners, elected by the Medical Society of North Carolina, whose requirements are that a candidate must pass the Board's examinations.

North Dakota has a State Medical Examining Board, which is appointed by the Governor. Examinations are required of all applicants, graduates as well as non-graduates.

Ohio has a State Board, appointed by the Governor. Graduates with diplomas from recognized medical schools are not examined

Oklahoma has a Board of Medical Examiners. Graduates with diplomas from recognized schools are exempted from examination.

Oregon has a State Board, and all applicants for licenses to practice medicine must come up for examination. No diploma is recognized as a sufficient qualification to practice.

Pennsylvania has three Boards of Examiners—Regular, Homœopathic, and Eclectic—all of which are appointed by the Governor. Ex-

amination is compulsory, and none but graduates from reputable medical schools are allowed to apply.

Rhode Island has a State Board of Medical Examiners, that requires an examination of each candidate who has not a diploma from some reputable medical college.

South Carolina has a State Board. No diploma is recognized, and graduates as well as non-graduates must pass the Board's examinations.

South Dakota has no Examining Board, but each candidate for license to practice must be a graduate of some recognized school that requires three or more years.

Tennessee has a State Board, which requires an examination for license, but it accepts the diplomas of certain colleges as evidence of that examination.

Texas has no State Board. This State allows most any one to practice.

Utah has a State Examining Board, that examines both graduates and non-graduates who wish to practice in that State.

Vermont has a State Board of Examiners, which examines all candidates save those holding diplomas from recognized medical schools.

Virginia has a Medical Examining Board of twelve regular practitioners nominated by the Medical Society of Virginia and commissioned by the Governor; also two homœopaths, nominated by the Homœopathic Society, and likewise commissioned by the Governor. All applicants are examined by this Board—whether graduates or non-graduates.

Washington has a State Board, which is appointed by the Governor. Those applying for license to practice must first come before this Board for examination. Non-graduates may apply.

West Virginia has a State Board, appointed by the Governor. Those applying for a license to practice are required to pass the Board's examinations, regardless of whether the applicant holds a diploma or not.

Wisconsin has just secured a State Board of Examiners, to be appointed by the Governor from lists of ten names each, presented by the State Societies representing the three schools of practice, to consist of seven members—three representing the Regular School, two the Homœopathic, and two the Eclectic. All holders of diplomas from reputable colleges are free to practice without examination; but all others are obliged to pass an examination before the Board of Examiners. This Board must also pass on the merits of the diplomas submitted by holders.

Wyoming has no State Board, and the law allows practically any one to practice medicine.

American Medical Association.

The brief synopsis of the proceedings of the Semi-Centennial session, held in Philadelphia, June 1–4, 1897, given in this issue, gives but a faint idea of its great practical importance, or of its enjoyment. Hospitalities of every kind were generous and sincere. Beside the banquetings and receptions, by colleges, doctors and residents, we cannot let the contribution to the pleasures of the visiting doctors and the ladies accompanying them, by Messrs. Lea Brothers & Co., go unmentioned. It consisted in an evening at the Broad Street Theater with an entertaining program. The contribution of the Atlantic City (N. Jersey) Medical Society was an unparalleled generosity—consisting in a visit of twenty-four hours to their city by the sea, and the free enjoyment of the attractions along the noted "board walk." Such magnificent hospitalities, both in Philadelphia and at Atlantic City, we have never before seen.

Medical Society of Virginia.

In making arrangements for summer vacation, we would remind our readers that the Medical Society of Virginia will hold its annual session at Hot Springs, Bath county, Va., August 31, Sept. 1st and 2d. It is the only State Society that will have its session to begin during the usual summer vacation, and the place is so well known as a summer resort, on the C. & O. Railroad, that a large attendance and a profitable session may be anticipated. Members of other State Societies should come with credentials as fraternal delegates, and enjoy this session with the Virginia doctors, with the assurance that a good session is in store.

Medical Examining Board of Virginia

Will hold its meeting for the examination of candidates for licenses to practice in Virginia in the Capitol building, Richmond, Va., June 22, 23 and 24th, 1897. The Board will hold a preliminary meeting 8:30 P. M., June 21st.

For Neuralgia.

℞—Menthol..... .....
Guaiacol... ....āā gr. xv.
Absolute alcohol.. ..... ʒ v.—Mix.

S.: Gently rub small quantity over painful spot; then cover with cotton. Repeat two or three times daily if needed.—*Jour de Med. de Paris*, June 14, 1896.

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Original Communications.

THE RÔLE OF URIC ACID IN CERTAIN TYPES OF NEURASTHENIA AND ALLIED STATES—AN EXPRESSION OF DISTURBED METABOLISM.*

By F. SAVARY PEARCE, M. D., Philadelphia, Pa.,

Instructor in Physical Diagnosis, University of Pennsylvania; Fellow of the College of Physicians.

The complex chemistry of the human body seems as yet not entirely fathomed, although more and more as scientific medicine, especially in the line of physiological chemistry, advances, we are having brought out little by little the secrets therein contained.

Details in such work are innumerable, and one feels his weakness to demonstrate accurate facts; nevertheless, by prolonged experimentation, somewhat regular rules may be laid down. Inaccuracies must always creep in from any series of tests, but should not mar the validity of the whole.

In a paper on the study of *peptonuria* and *indicanuria* which Dr. John H. Musser presented to the Philadelphia County Medical Society,† this difficulty was very fully appreciated. We do not feel, however, like abandoning these lines of work in which it seems the future of accurate understanding of many symptoms of disease must be elucidated.

Dr. Simon's recent investigations‡ on indicanuria, prove in the main the statements held in that study. Our own further investigations have not warranted any other decision. The biuret reaction for peptone has given a reddish tinge, meaning peptone with certainty, according to Von Jaksch, has been controverted by Von Noorden, who claims that peptonuria does not exist. Whether this has been proven, seems an open question. If it is true that albumoses may give this same biuret reaction, but as they, too, are also the results of tissue waste, it would still appear that the significance of excessive quantitative finding would in a measure demonstrate cellular waste in the body.

Elimination is not always equal to the formation of any metabolic substance. This is especially true of uric acid, which, when being thrown off in excess, may yet not find its way from the body (the urine proving this), but may circulate, causing, as Haig points out, lithæmic headaches and other expressions; or it may remain latent in some remote crevices of the body, which are, for the time being, immune, more or less, to its presence. When over-accumulation *finally* occurs, or when some disturbing cause, as "catching cold," is the *vis a tergo*, pushing the uric acid suddenly into the circulation, we have a urate and uric acid *local* or *constitutional* paroxysm. It may be of gout, headache or a "nervous chill," or of other less understood phenomena.

It was suggested to the writer by Dr. F. X. Dercum, that uric acid might be a factor as a cause in part of the symptomatology of some cases of that persistent, almost hysterically multiform ailment, neurasthenia. Might not, for example, some persistent headaches, after ocular defects have been carefully corrected, be at times the result of uric acid irritation, when it is not one of long standing eye impression, as Dr. Mitchell has proven?

It was first thought best to fix standards for health as to uric acid excretion during the twenty-four hours under different conditions of body activity. (1) It were best to know the quantity of this substance excreted during a daily active life on an ordinary diet; (2) on a milk diet; (3) on a meat diet; and (4) with exhausted states after a prolonged muscular effort, as compared with the conditions of tissue waste found in one when at absolute rest. It would be necessary, of course, to have

* Read before the Section of Medicine Forty eighth Annual Meeting [Semi-Centennial Session] of the American Medical Association in Philadelphia, June 4, 1897.

† "The Diagnostic Value of Peptonuria and Indicanuria," *Transactions of the Philadelphia County Medical Society*, June 13, 1894, Vol. XV, p. 312–322.

‡ *American Journal of Medical Sciences*, August, 1895.

accurate weights during the time of such a study. The writer attempted this upon himself, but owing to numerous vicissitudes, the beginning series was vitiated, and as no one in health could be obtained willing for the sacrifice, the project has not yet been consummated. We propose to carry out the above formulated line of investigation at the opportune moment.

The interesting experiments carried out by Prof. O. P. Tower, of Wesleyan University, will be of great value bearing on ingesta and excreta, as indicated above.

The average normal standard for health of uric acid excretion by the kidneys, given me recently by the late Professor Wormley, as 11 grains per diem, is therefore taken as the basis for gauging and comparing the variable amounts excreted by the kidney and recovered in the urinalyses, made as the basis of this paper.

The influence on uric acid excretion on an absolute meat diet has been especially desired by Dr. S. Weir Mitchell, who has thrown out valuable suggestions during the study just begun. *A certain negative value of the work already done, is the main object of this presentation.*

Experiments herein contained are relative to nervous states alone. In the one case in which a detailed series of tests was made, there existed profound neurasthenia and tormenting intestinal indigestion in a male of slender build, a deeply hypochondriacal type of the protean affection. He was 28 years of age, and under the care of Dr. S. Weir Mitchell, was placed in a private room in the Infirmary for Nervous Diseases. In this terminal neurasthenic case, we had the hearty co operation of the patient, who had become quite disgusted with his existence, and who was willing to shed any new light on the science of medicine for himself or man-

TABLE A—I. CASE OF M. M. TERMINAL NEURASTHENIA.

Amt. Uric Acid in 200 c. c. of the 24 hours' Urine.	Sp. Gr.	Urine—Amt. 24 hours—oz.	Albumen.	Color.	Reaction.	Other Constituents.	Stools.	Notes.
20 m. g.	1024	31	No.	Clear.	Acid.	.....	Flakey.	Restless.
25 m. g.	1028	30	No.	Clear.	Acid.	.....	.....	.....
100 m. g.	1028	28	No.	Darker.	Acid.	.....	.....	.....
120 m. g.	1027	28	No.	.....	.....	.....	.....	Better.
120 m. g.	1028	29	No.	Cloudy.	Acid +.	.....	.....	.....
50 m. g.	1013	78	No.	Light.	Acid.	.....	.....	.....
50 m. g.	1028	36	No.	Higher.	Acid.	.....	Diarrhœa.	Irritable.
On solid food.								
20 m. g.	1022	50	No.	Light.	Acid.	.....	.....	.....
20 m. g.	1022	50	No.	Light.	Acid.	.....	.....	.....
50 m. g.	1012	44	No.	Light.	Acid.	.....	.....	.....
50 m. g.	1009	60	No.	Light.	Acid faintly.	.....	.....	.....
No gain.	1012	53	No.	Light.	Acid faintly.	.....	.....	Insomnia.
50 m. g.	1024	36	No.	Darkish.	Acid.	.....	.....	.....
20 m. g.	1025	48	No.	Clear.	Acid.	.....	.....	.....
20 m. g.	1023	33	No.	Clear.	Acid.	.....	.....	.....
20 m. g.	1020	48	No.	Light and very clear.	Acid.	Phosphates.	.....	.....
Begun skim milk diet to-night.			Drank much water.					
20 m. g.	1024	26	No.	Clear.	Acid.	.....	.....	.....
50 m. g.	1009	82	No.	Light and Clear.	Acid.	.....	.....	.....
Skim milk.								
100 m. g.	1010	69	No.	Light.	.....	.....	.....	.....
20 m. g.	1020	69	No.	Clear.	Acid.	.....	.....	.....
70 m. g.	.....	69	No.	Clear.	Acid.	Phos.+ Spindle cells.	.....	.....
20 m. g.	1014	57	No.	Light.	Acid.	.....	.....	.....
310 m. g.	1013	60	No.	Light and green tinge.	Acid.	.....	.....	.....
.....	1013	64	No.	Light and green tinge.	Acid.	.....	.....	.....
100 m. g.	1012	60	No.	Light and green tinge.	Faintly acid.	.....	.....	.....
20 m. g.	1012	54	No.	Clear.	Acid.	.....	Flakey deposit.	Full doses Sod. Bicarb.
70 m. g.	1020	60	No.	Cloudy.	Alkaline.	.....	.....	.....
70 m. g.	1020	60	No.	Cloudy.	Alkaline.	Phosphates +.	.....	.....
70 m. g.	1014	80	No.	Cloudy.	Neutral.	Phosphates +.	.....	.....
20 m. g.	1015	70	No.	Clear.	Faintly alkaline.	.....	Uric acid in stool.	Diarrhœa.
20 m. g.	1015	58	No.	Clear.	Acid.	.....	.....	.....
20 m. g.	1010	70	No.	Clear.	Acid.	.....	.....	.....
50 m. g.	1019	56	No.	Clear.	Acid.	.....	.....	Better.
No gain.	1014	60	No.	Clear.	Acid.	.....	.....	Better.
No gain—Last day semi-liquid diet.	.....	62	.....	.....	.....	.....	.....	Better.
No gain.	1015	70	No.	Pale.	Acid.	.....	.....	Worse.
10 m. g.	1012	48	No.	Clear.	Acid+.	.....	.....	.....
20 m. g.	1012	80	No.	Clear.	Acid.	.....	Extra flakes in stool.	.....
20 m. g.	1014	74	No.	Clear.	Acid.	.....	.....	Much improved.
15 m. g.	1012	72	No.	Clear.	Acid.	.....	.....	.....

kind. We were thus able to carry out the details pretty thoroughly with the advantages of an efficient hospital attendance. The urine was carefully measured for each twenty-four hours, when a half pint of the amount was selected each morning for testing. The macroscopic and microscopic changes were carefully noted; also the stools were observed from time to time as the diet exercised both active and passive (massage) effects were interchanged. Temperature, pulse and weight were also recorded. The patient's blood count was normal. There was no eye lesion.

The following table shows a series of forty-two examinations out of fifty tests made (the others being checks) over an extended time. It is to be remarked, in deference to experimental medicine, that the patient made a favorable gain in his condition, and that a Western life from recent letters shows continued improvement.

As to other cases selected for examination of this excretion, they ranged from mild to terminal neurasthenias, and from the so-called nervous body to those suffering from organic cord disease. One case of rheumatoid arthritis and several of rheumatic neurites and of lithæmic headaches were tested—some twenty-eight tests being made. [See Table B.]

These experiments are too few to more than lead to inklings for more extended research. The blood alterations, too, must be observed further as a useful help in any metabolic study. The work was done in the Infirmary for Nervous Diseases.

Tests.—The *quantitative test* for uric or lithic acid ($C_5H_4N_4O_3$ mol. wt. 168) a diabasic acid, containing two replacable atoms of hydrogen, and found in the urine chiefly as sodium acid urate ($NaHC_5H_2N_4O_3$) is given by Prof. Theo. Wormley as follows: If albumen be present, remove by coagulation by heat. To 200 c. c. urine (if not clear, filter,) add 5 or 10 c.c. HCl. and allow to stand for twenty-four hours. Uric acid separates in crystalline form, some of the crystals float on the liquid. Collect the crystals on a washed or an equipoised filter, using the filtrate to wash the crystals out of the beaker. Wash the crystals with small portions of water (5 c. c.) at a time until the filtrate is free

TABLE A—II. CASE M. M.

Weight.	Urine 24 hours, 6–6 P. M.	Stools.	Diet.	Memo.
119½	4.3.4.4. oz. xxxi	4.2.	.....	Rest, massage daily.
119½	4.4.45. xxx	3. ii	.....	.....
120½	4.4.45. xxviii	4. Enema.	.....	.....
121	4.5.4.6. xxviii	5. i	.....	.....
122	4.6.4.7. xxxviii	6. i	.....	.....
122½	4.7.4.8. xxix	7. i	Milk, 54 oz. daily.	Around house.
123½	4.8.4 9. xxix	8. 1	6 a. m. 8 p. m. Milk, lxx daily.	.....
121¼	4.9.4.10. lxxviii	9 i	.....	.....
120¾	4.10.4.11.lxxviii	10. 1 Enema.	6 a. m. 8 p. m. Milk, lxx daily.	.....
120	4.11.4.12.lxxxiv	11.	.....	.....
119¾	4.12.4.13. lxiv	12. 1 Enema.	.....	4.14.95. Walk & semi-rest.
119¾	4.13.4.14. lxii	13.	.....	.....
118¾	4.14.4.15. lv	14. i	Milk, fl. oz. lxxx daily, every 2 hrs. 10 oz. doses.	.....
119	4.15.4.16. lx	15. ii	.....	.....
119¼	4.16.4.17. lix	16. i	.....	.....
119	4.17 4 18. liii	17. i	.....	.....
121	4.18.4.19. xxxvi	18. i	.....	.....
120¾	4.19.4.20. xlviii	19. i	.....	.....
121¾	4.20.4.21. xxxiii	20. i	.....	.....
121¾	4.21.4.22. xxxvi	21. i	Sklm milk, 78 oz. daily.	.....
121	4.22.4 23. xlviii	22. Slight. i	.....	.....
119	4.23.4.24 lxxxii	23. i	.....	.....
119	4.24.4.25. lxiv	24. 1 Enema.	.....	.....
119	4.25.4.26. lviiii	26. 1	.....	.....
119	4.26.4.27. lvii	27. Very slight. ii	.....	.....
118½	4.27.4 28. lxii	28. Slight. 1	4. 29. 95. Increase xe oz. daily milk. Skim milk.	.....
118¼	4.28.4.29. xxi	29. 1	.....	.....
.....	4.29.4.30. lxlv	30. i	.....	.....
118	4.30.5.1. lvil	5.1	.....	.....
117¾	5 1.5.2. xlvii	2. i	.....	.....
117	5.2.3. lvifl	3. 1	.....	.....
117¼	5.3.4. lxviii	4. 1	.....	.....
116½	5.4.5. lviii	5. i	.....	.....

Weight.	Urine, 24 hours, 6–6 P. m.	Stools.	Diet.	Memo.
116½	5 5.6. lxiv	6. i	.....	.....
115¾	5.6.7. lxiv	7. Free. i	3 raw eggs, bread and butter, in milk, daily s. b.	.....
116½	5.7.8. l	8. Slight. i	.....	.....
116	5.8.9. lx	9. i	Milk 8 times instead of 9 times.	.....
115¾	5.9.10. lii	10. i	.....	.....
114¾	5.10.11. xxxvi	11. i	.....	.....
115¾	5.11.12. l	12. i	.....	.....
116	5.12.13. lviii	13. Free. i	Rice, milk, toast, p. r. n. Renned whey once daily.	.....
115	5.13.14. xlii	14. i	.....	.....
117	5.14.15 lxxx	15. i	.....	.....
117¼	5.15.16. lxvi	16. i	.....	.....
117¼	5.16.17. lxx	17. i	.....	.....
117¾	5.17.18. lxxii	18. i	.....	.....
118¼	5.18.19. lxvlii	19. i	.....	.....
119	5.19.20. lvi	20. 1	Soft diet, oz. viii, 8 times daily.	.....
119	5.20.21. lxxii	21. i	.....	.....
119¾	5.21.22. lxiv	22. 1	.....	.....
119¾	5.22 23. lxv	23. i	.....	.....
120¾	5.23.24. lx	24. Slight. i	.....	Walk out 20 min. daily.
121¼	5.24.25 lvl	25. 1	.....	.....
121¾	5.25.26. xlli	26. il	.....	.....
122½	5.26.27. lii	27. il	House milk at and bet. meals.	.....
122¼	5.27.28. lxx	28. i	.....	.....
122¾	5.28.29. xlvlil	29. 1	.....	Walk out ½ hour b. d.
124	5.29.30.	30. i	.....	.....
121½	5.30.31.	31. 1	.....	.....
.....	5.31.6.1. xxxviii	.....	.....	.....
122	6.1.6.2. xxvlll	6.1 i	.....	.....
122¼	6.2.3. xxxvl	2. i	.....	.....
123¼	.....	.....	.....	.....
123½	.....	.....	.....	.....

from hydrochloric acid. (Test with Ag. NO_3). Allow the crystals to dry on a filter paper. Separate the two equipoised filters and weigh. The weight obtained is the quantity of uric acid in 200 c. c. of urine. Divide the weight by 2, and the result is the per cent. If over 30 c. c. of water are required in the washing, then for every cubic centimetre of water employed over 30 c. c., this fraction must be added: .000045 gr. to the weight of uric acid obtained.

The record of the case studied, a male, aged 28, suffering from profound neurasthenia and tormenting intestinal indigestion, is here tabulated as to the amount of uric acid found in 200 c. c. of the whole daily amount of urine, through an interval of two (2) months. [See Tables 1 and 2.]

On admission, the man was still suffering from many of the harrassing symptoms he had experienced so long of the terminal stage of his disorder, viz: Distress in mind and body, with no lesions anywhere to account for them. His weight was 119½ pounds. The pulse was pretty constantly rapid and of moderate volume. His heart was normal. The temperature kept near that of health. He was placed on house diet without restrictions as to exercise for the next six days—no treatment being administered. He then passed thirty ounces of urine daily; on an average, the uric acid excretion averaging 50 m. g. in 200 c. c. Stools averaged once daily. They were soft, containing some mucus and flakes of undigested food. Abdominal tympanites and great distress—a vague feeling of pressure—were symptoms also of the disturbed metabolism, no doubt like retrocedent gout, as I see it now. (We are too apt to draw sharp lines of distinction between many metabolic processes.)

To this, the added abnormal mental state portrayed a picture of disturbed functionation, indeed. Perhaps transient *organic* disturbances of the nervous system is, after all, the correct term to use, when uric acid or other poison is the cause of symptoms in disease. For this reason this one case was worked to every detail, the other series of miscellaneous cases (see Table B.) being tested, the more as "checks," as said, to the experiments on the original. As is manifest in these tables, there is a wide fluctuation of the quantitive findings, which proves in itself that uric acid was either a *cause* or *result* of the symptom complex in the cases studied.

Table A—I represents the amount of uric acid passed in twenty four hours; its specific gravity, reaction, color, notes on the other constituents, and amount of uric acid recovered from 200 c. c. the twenty-four-hour urine. This finding must be multiplied by 6 to record the amount of uric acid passed in twenty-four hours by the kidneys, taking 1200 c. c. as an average urinary daily excretion for him.

Table A—II carries out in detail over the same extended time, the weight of the patient, nature of the diet, the character of treatment, the food and exercise, and the nature of the stools. Medication was withheld in order not to alter the normal or abnormal elimination of uric acid.

For four days the patient was put to bed *on*

TABLE B—MISCELLANEOUS CASES (NEURASTHENIC AND ORGANIC CASES.)

Amt. Uric Acid in 200 c. c. of 24 hours' urine.	Sp. Gr.	Albumen.	Color.	Reaction.	Other Constituents.	Stools.	Notes and Care.
116 m. g.	1025	No.	Clear.	Acid.	Phosphates.	.....	Sod. phos. gr. xxx. Sod. salicylate.
120 m. g.	1022	No.	Clear.	Acid.	Slight deposit.	.....	Neurasthenia.
125 m. g.	1030	No.	Clear.	Acid.	Ox. and Phos.	.....	Rheumatic neuritis.
25 m. g.	1012	No.	Dark.	Acid.	.....	.....	Sod. phos. gr. xxx. b. d.
150 m. g.	1014	No albumen No glucose.	Clear and dark.	Acid.	.....	.....	Sod. salicyl. added to liquid.
10 m. g.	1028	No.	Dark.	Acid.	.....	.....	"
10 m. g.	1028	No.	Dark.	Acid.	.....	.....	"
110 m. g.	1028	Trau.	Dark.	Acid.	No glucose. Urine acid.	.....	Locomotor ataxia.
300 m. g.	1020	No.	Dark.	Acid.	.....	.....	Nervous gout.
Improved tra umat ic spine, neu rasthenia.							
100 m. g.	1020	No.	Clear.	Acid.	.....	.....	Neurasthenia.
200 m. g.	1026	No.	Clear.	Acid.	.....	.....	"
150 m. g.	1026	No.	Clear.	Acid.	.....	.....	"
80 m. g.	1022	No.	Clear.	Acid.	.....	.....	"
120 m. g.	.....	.....	.....	.....	.....	.....	"
170 m. g.	1022	No albumen No glucose.	.....	.....	.....	.....	Locomotor ataxia.
100 m. g.	1026	No.	.....	Acid.	.....	(Glassed.)	Nervous headache.
50 m. g.	1020	No.	Clear.	Acid.	.....	.....	" No glucose.
50 m. g.	1020	No.	Clear.	.....	.....	.....	" No glucose.
100 m. g.	1030	No.	Clear.	.....	.....	.....	" No glucose.
40 m. g.	1020	No.	Dark.	Acid.	.....	Typhoid.	" Aged 20.
50 m. g.	1036	No.	Light straw.	Acid.	.....	Normal.	.....
Few crystals.	1018	Much.	Light straw.	Acid.	Gran. casts, some narrow	.....	Two examinations.

In this table more uric acid was recovered, and there were no marked intestinal symptoms in the cases, which lead again to the thought that uric acid must be eliminated by the bowel in those (as in Table A—I) where gastro-intestinal distress is possible.

house diet, with the addition of gentle daily half hour massage, and was allowed to walk around the halls for a short time. He gained three pounds during this time, and the urine remained an average of thirty ounces. The stools were kept free easily by enema. Uric acid recovered, averaged 50 m. g. (This is less than half or normal excretion of the salt by the urine.)

He was now put on fifty-four ounces of milk daily, it being increased until he reached eighty ounces daily by the 14th.

April 14th.—The uric acid now fell to an average of 35 m. g. in 200 c. c. of the daily urine. His weight had gone down by this time four pounds, and the urine excretion had been increased from fifty to eighty ounces—the specific gravity of the urine going down to 1009. The harrassing abdominal symptoms, however; increasing tympanites, etc., continued, (which we now suspect was due to uric acid irritation, as pointed out above, for it was recovered from the stools.)

He was then put on *partial* rest treatment with daily massage, continuing this large amount of milk and adding Hunyadi water in the morning and essence of pepsin after meals, to aid digestion. His weight during these days kept pretty constantly an average of 120 pounds—at last gaining one pound by the 23d. The surroundings certainly favored normal metabolism, if it were to exist at all in his perverted nervous system.

April 23d.—The urine was reduced during this lack of active exercise to thirty-three ounces. The uric acid averaged 20 m. g. (one-sixth of normal), the specific gravity attained 1023, however, and the urine contained phosphatic deposit. It was only faintly acid. The man was now put at *absolute* rest treatment, keeping up the gentle massage daily. Large enemas of lime water were given to control the extreme intestinal hyperacidity. The man was placed on seventy-two ounces of skimmed milk in divided doses (every two hours). The weight went down to 119 pounds. The urine went up to eighty-two ounces (perhaps the injections increased this). The uric acid now began to vacillate, on the whole increasing, reaching an average of 55 m. g. Specific gravity 1020, with considerable phosphatic deposit. Ice bags had been applied to his abdomen constantly to relieve distress, and an occasional A. B. S. pill given at night.

Without further elucidation (for details of the work, see tables A—I, A—II, A—III); let it suffice to state that this man remained at "*rest*" for one month on varied diets with but little medication, and was then gradually gotten up and about. Massage, electricity, rest or activity seemed to have no effect on the ever-changing amounts of uric acid recovered from the urine. The average amount of uric acid recovered from 200 c.c. of the twenty-four hour urine was 91.3 mg., which amounts to between 6 and 7 grains of uric acid recovered from the whole amount of urine passed in the twenty-four hours. This is considerably less than the normal (gr. xj), and in itself gives a clue to the rôle that uric acid *must* play in neurasthenia. The only question of doubtful nature arising is as to *post hoc* or *propter hoc*.

Table B gives records of a number of miscellaneous cases, mentioned above, where the same ever varying amounts of uric acid was recovered.

From the above study, we draw the following

CONCLUSIONS:

1. Disturbed metabolism is the cause *sui-generis* of a number of symptoms in many constitutional diseases.

2. This interference with the proper physiological oxidation of food products, especially of proteids, and the retention of these sub-oxidized products in various parts of the body all along the line of the arterial tree, is again the *secondary* cause of added symptoms in diseases (as neurasthenia essentialis), where the initial symptoms could not be placed to disturbed metabolism.

3. That whether uric acid oxalates, alloxur bodies, or other by-products, are or are not found in excess in the urine (uric acid diminished in our study), we *must*, judging rationally, assume that in many cases of nervous disease, such substances are retained in the body and are *the* causes of many of the somatic phenomena in such chronic maladies.

4. That finding, as we have, such variations in the quantitative findings of uric acid in the same case under apparently similar symptomatology; and with much variation in diet, exercise, etc., we *must* assume that the cause is not *dietary* indiscretions nor *idiosyncrasy* in many cases.

5. That as regards *uric acid in neurasthenia*, and allied nervous states, it must exert a considerable ætiological influence on essential cases; and be, no doubt, the cause of many *secondary* (symptomatic) cases of these same maladies. This would explain *hysteria* in organic brain disease in large part.

6. That back of it all we therefore have the histo-chemically weakened neurosis (the element of tire or exhaustion beautifully proven

by Hodge) hereditary or acquired, perhaps well intact in the so-called essential cases of nervous exhaustion. Later becoming exhausted, these millions of nerve cells cease to control metabolism; uric acid is formed, and with other products, as peptone, albumoses, nucleins, and the like, all circulating in the blood, produce a complex jungle, causing every variety of symptom in the then toxic individual: The refinement of physiological chemistry is yet too crude to detect the exact place and amount of these waste matters.

7. That the failure to recover the so-called normal urinary amount of uric acid is in part due to its being retarded in the system in ever varying amounts, and also from the fact that uric acid is excreted by the gastro-intestinal tract (see reference No. 8), and that uric acid is sometimes in part (as we believe now in our studied case) the cause of intestinal irritation in certain types of neurasthenia.

8. That other leucomaines, that ptomaines, and the acrid gastro-intestinal secretions are together causes of such symptoms in some cases of neurasthenia, or at least the cause of exacerbations of symptoms already existing.

9. That certain persistent occipital headaches not relieved by proper glasses or eye-treatment may be due to uric acid deposited in the meninges.

10. In the treatment of neurasthenia the best results will be gained by observing the above indications.

Rest, isolation, massage, electricity, forced feeding even to peptonizing the large amounts of milk given; the change of scene, suggestion, personality of the physician, absence of worry, all are paramount for a successful issue of the case.

Then the use of the Brown-Séquard, the thyroid, and other organic extracts, should be tried in a persisting case, (where "*everything*" has been done) as a means of possibly ridding the system of some hidden internal secretion that may be acting as an irritant.

Thus the use of salicylate of soda I have seen do much good in neurasthenia, especially where vague shooting pains were tormenting.

Correction of hyperacidity by lavage, bicarbonate of soda, phosphate of soda, relieving constipation, caring for the skin, the use of diuretics where the urine is scanty and highly colored, and attention to the other emunctories with, at times, a needed intestinal antisepsis, are also details to be watched by the physician who hopes to cure neurasthenia.

Other references to this subject are as follows:

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2. A Study of Haig's Uric Acid Theory. By Gertrude W. Van Pelt, M. D. *Boston Medical and Surgical Journal*, Feb. 6, 1896.

3. Phosphate of Soda in Nervous Affections.—*London Lancet*, Jan. 11, 1896.

4. Periodische Depressionszustände und ihre Pathogenesis auf dem Boden der harnsaurien Diathese—von Prof. C. Lang, in Kopenhagen, 1896.

5. Use of Sodium Salicylat and Bromide of Potash on Irritable Temper and Gout —*Journal of Physiology*, Vol. XVII, No. 5. 1894.

6. Influence of Music on Animal Thermogenesis Increases Activity of Tissue Metabolism.—*Il Policlinico Rom.*, June 1, 1896.

7. Albumosuria. Harris.—*Journal of American Medical Association*, May, 1896.

8. Oddo—Intestinal Lithiasis.—*Bull et Mem. de la Soc. Med.*, June 25, 1896.

9. Haig (Uric Acid).—*British Medical Journal*, Oct. 3, 1896.

10. Bohland.—*Centralblatt fur Inner. Med.*, 1896.

11. Some Experiments Upon the Relation of Uric Acid to Disease. By F L. Hills, M. D.—*American Medico-Surgical Bulletin*, March 19 and 26, 1896.

1407 *Locust Street.*

LABOR IN A CASE OF ELONGATION OF THE VAGINAL PORTION OF THE CERVIX UTERI.

Forceps Delivery with the Os Externum Two Inches External to the Vulva.

By H. R. COSTON, M. D., Fayetteville, Tenn.

Elongation of the cervix uteri is a disease of no great rarity, but it is rare to find it so long as to protrude through the vulva in a pregnant woman at term; it is also very unusual to deliver the head of an infant through the vulva before it is through the os uteri; the more especially so when the woman is a pluripara.

Believing in the proverb that "there is nothing new under the sun," I report this case, not as something unique, but as out of the ordinary. Doubtless such cases have often been observed and reported, but in a considerable search through the most recent literature I have been unable to find a parallel case. It is therefore deemed worthy of record.

Mrs. C——, colored, æt. 25, VI-para. Last child born 18 months ago. I was called at 11 P. M.; she had been in labor since 11 A. M. —twelve hours. When I entered the room, the colored midwife told me there was "something come into the world as big as her fist," and that she supposed it was the mouth of the womb; that it had been out all day, and the patient stated that the first indication of labor was the sudden prolapse of this body through the vulva.

The pains had been strong and regular all day, and the patient was becoming exhausted from pain and hemorrhage, the latter being quite free. Upon examination, I found the cervix projecting at least two inches external to the vulva; passing my finger around the cervix, I found it to be at least three and one-half inches to the os internum. Upon intra-cervical examination, I found the head occupying the right occipito-posterior position and lying on the perineum; the long cervix was very edematous, but patulous and easily lacerated; with a little effort, I soon had my entire hand within the cervix.

Apparently, the only reason the child had not been delivered was lack of a resisting force to compel the os to slip back—retract—over the child's head.

I gave ergot hypodermically and tried manually to push the cervix over the child's head, but could not do so. At midnight, I applied the forceps and delivered the child in the R. O. P. position, without perineal tear, *although the head was still within the cervix when it had passed over the perineum and out of the vulva.* With one hand I held the child's head steady by means of the forceps, and with the other hand I pushed the elongated cervix from over the head, the cervix lacerated to the depth of two inches. I wished to cut this away at once, but was not allowed to do so; I left it, hoping it would atrophy with the uterus proper, or that I would be allowed to resect it after the patient's recovery, which she agreed I should do.

This case illustrates one of the many trying positions to which practitioners in small towns are often subjected, being compelled, as I was in this case, to act promptly and alone.

The woman recovered nicely, a certain amount of atrophy taking place, but an operation is greatly needed.

THE COMPARATIVE MERITS OF THE DIFFERENT OPERATIONS FOR STONE IN THE BLADDER.*

By JOHN B. DEAVER, M. D., Philadelphia, Pa.,

Surgeon in Chief of the German Hospital, Philadelphia.

In looking over my records of operative cases, I find that stone in the bladder comprises a fair percentage. To decide, in all cases of stone, the proper operative procedure to adopt, that which will be safest for the patient, and at the same time accomplish the best results, is not always a simple matter.

The two popular operations with the surgeons of to-day are *supra-pubic lithotomy* and *litholapaxy.* From personal knowledge, I am rather inclined to believe that supra-pubic lithotomy is done oftener by the young and the occasional operator than is litholapaxy.

I am in accord with the majority of experienced operators in the opinion that *litholapaxy* is applicable in almost all cases of stone. Although litholapaxy is applicable in the majority of cases, there are conditions which render this operation unsuitable, and therefore forces us to choose one of the cutting operations.

The first and most important, because the most frequent, condition which may interfere with litholapaxy is a stricture of small calibre, located either in the anterior or the deep urethra. If in the anterior urethra, and the stricture cannot be dilated up to 20mm. calibre, thus permitting the introduction of the Otis dilating urethrotome, with which the urethra is restored to its normal calibre, it is my practice to cut it with the Maisonneuve urethrotome up to 20mm., and complete its division with the Otis instrument. This constitutes the first step of the operation under these circumstances.

While I prefer to restore the strictured urethra by dilating internal urethrotomy, it is the practice among many surgeons to dilate the stricture in order to facilitate the passing of the lithotrite and evacuating tube. When the latter procedure is feasible, the choice becomes a matter of individual preference.

With but few exceptions, stricture of small calibre in the deep urethra, in my experience, can be divulsed to a size which will admit of the introduction of the lithotrite and the evacuating tube. If the urethral calibre cannot be restored, litholapaxy is out of the question.

Under the latter condition, perineal lithotomy is the choice of operation, as it accomplishes the division of the stricture and the removal of the stone. If the stone is large, perineal litholapaxy with a Harrison perineal crusher will fulfill the indication.

One of the objections which may be urged against this method of restoring the obstructed urethra and removing the stone at one sitting, is the difficulty which may be encountered in the introduction of the lithotrite or the evacuating tube. This difficulty consists in the liability of making a false passage. I do not regard this as a valid objection. If the necessary delicacy be exercised in the introduction of the instrument, and the beak of the litho-

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* Read in the Section on Surgery and Anatomy of the American Medical Association, June 2, 1897, during the Semi-Centennial Session of the Association, Philadelphia, Pa.

trite or the tip of the evacuating tube be made to hug the floor of the urethra, the instrument readily passes into the bladder.

In cases where a false passage or passages already exist, from previous urethral instrumentation, the difficulty met with in the attempt to introduce an instrument into the bladder may be so great as to render litholapaxy impracticable. When it is possible, under these circumstances, to introduce a staff into the bladder, no matter how small, it is advisable to do a perineal lithotomy.

The second condition which may arise and prevent litholapaxy is enlargement of the prostate gland. Experience teaches us that in enlargement of this gland, it is exceptional not to be able to introduce the instruments necessary to perform litholapaxy, particularly if their passage is facilitated by the introduction of the finger into the rectum. Should this arise, however, as it sometimes does, supra-pubic lithotomy becomes the preferable operation. Although castration is recommended for the reduction of an enlarged prostate, I take it that no rational surgeon, in the light of the two conflicting conditions existing, would recommend castration as a preliminary operation to the removal of the stone. Supra-pubic lithotomy not only permits of the removal of the stone, but offers the added advantage of performing a prostatectomy if deemed advisable. The same advantage is afforded by this operation when a stone is complicated by a growth or tumor of the bladder.

Cystitis is offered by some surgeons as a contra-indication to litholapaxy. Personally, I believe that there are but few cases where cystitis alone contra-indicates the operation of litholapaxy. Cystitis, associated with stone in the bladder, exists as one of two varieties—that resulting from the presence of the stone, and that which precedes the formation of the stone and is due to senile changes. In the former variety, the removal of the stone will be followed, in the majority of cases, by a disappearance of the cystitis; and when this is not the case, the ordinary treatment for this affection will suffice to bring about a cure, so that a cutting operation, with the idea of adding drainage as a desirable end in the treatment of the bladder inflammation, is unnecessary. In senile cystitis, most cases improve after the operation of litholapaxy and the institution of the ordinary treatment for this affection. Even in senile cystitis, most cases improve after the operation of litholapaxy and the institution of the ordinary treatment for this type of cystitis, including washing out the bladder. It has been my experience that litholapaxy does not aggravate the inflammation in cases of senile cystitis. While perineal drainage in cases of senile cystitis will temporarily improve the local inflammation, it has been my experience that recurrence of the inflammation soon follows the healing of the perineal opening.

Litholapaxy, in cases where the stone is very large—say, over two ounces in weight—becomes a difficult and tedious operation. If, in addition to its weight, it is hard, litholapaxy may be out of the question entirely.

To crush a large stone, the urethra must be large enough to allow the largest lithotrite to pass freely into the bladder. When the bladder is contracted or sacculated, or the prostate is hypertrophied, and the stone is large and hard, supra-pubic lithotomy had better be substituted. Experience is the factor which will often decide the operator as to the safety and possibility of litholapaxy under such conditions. The operator's patience and endurance will frequently be tried to the utmost, for it is essential for success that the operation be completed at one sitting, otherwise it should not be undertaken.

And here might be mentioned, in connection with the necessity for completeness of the operation at one sitting, that the bleeding which occurs when litholapaxy is performed in the presence of an enlarged prostate, often complicates the removal of the fragments. Fragments of stone will become enveloped in blood clots, and may necessitate repeated introduction of the evacuating tube and washing out, so that the clot can be washed from the fragment. Stones of larger size, which are irregular in shape, can be dealt with, if patience and skill are combined in the performance of litholapaxy. Knobs or excrescences can be crushed off, and, by repeated scraping of the sides of the stone by the blades of the lithotrite, a large stone can be reduced to a size which will permit of crushing. If, in crushing a larger stone, the jaws of the lithotrite grasp it in its long axis, the instrument will not lock. As a rule, the short axis will permit of locking of the instrument, and the stone can be crushed.

A very large and hard stone, particularly if associated with an irritable bladder, may render litholapaxy inadvisable. At times, in such cases, the bladder will not retain sufficient fluid, even under complete anæsthesia, to permit crushing with safety. To the experienced, the operation of litholapaxy can be safely performed when the bladder is capable of retaining one to two ounces of fluid. To those who

are not skilled in the necessary manipulation, a wiser course under these circumstances would be to choose a cutting operation. In exceptional instances, stones in the bladder are so large as to almost fill the organ. This would leave no choice of operation, indicating supra-pubic lithotomy, and even then it may be necessary to deliver the stone piecemeal.

Encysted stone is a condition which would seem to contra-indicate litholapaxy. There are some cases of encysted stone which can be crushed and washed out. If, however, the stone completely fills the sac, and the mouth of the sac is small, supra-pubic lithotomy is the only rational procedure.

When an encysted stone lies loosely in its sac, it can be crushed, even though the mouth of the sac be too small to allow its escape into the bladder. In such cases, the stone can be crushed in situ, and the fragments washed out into the bladder and thence removed. If the stone, when grasped in the jaws of the lithotrite, can be drawn into the bladder, it is well to crush the stone there, on account of the increased facility for manipulation.

In partially impacted stone, or where the body or main portion of the stone occupies the bladder, and a small prolongation is in the prostatic urethra, the two being connected by a small arm, the stone must be pushed backward into the bladder before litholapaxy can be successfully carried out. If it remain stationary, lithotomy is the only resort.

The condition of the kidneys must be seriously considered when deciding upon any operation for stone. Patients with chronic interstitial nephritis, excreting large quantities of urine of low specific gravity, bear crushing operations well, while under the cutting operations, they not infrequently die. If, in addition to the interstitial nephritis, the pelvis of the kidney is the seat of chronic inflammation, the gravity of the lesion is increased. Even when extensive disease of the kidney exists, litholapaxy offers a safer and more favorable outlook for a successful termination. It seems paradoxical that litholapaxy is a safer procedure in chronic kidney affections, when we consider the amount of anæsthetic consumed and the prolonged operation sometimes required to complete it, and contrast it with the rapidity with which a lithotomy may be done. Experience, however, has conclusively shown that litholapaxy is by far the safer operation. A reference to statistics will verify this assertion.

In the few cases of stone in which litholapaxy is contra-indicated, a choice of one of the cutting operations must be made. In choosing the supra-pubic route, we must first consider certain general conditions. First, children under thirteen years of age are not favorable cases for the supra-pubic operation, as experience teaches us that the mortality is very high. The local conditions which lead some surgeons to prefer supra-pubic lithotomy are not valid reasons. The urethra is rarely so small as to prevent the passage of a small lithotrite and evacuating tube. The cystitis which co-exists with the stone does not, as a rule, require drainage to perfect a cure. The rapid and usually uninterrupted recovery after the operation of litholapaxy is one of the strongest points in its favor. A patient, upon whom litholapaxy has been performed, is enabled to resume his occupation in from five to seven days, under ordinary conditions; while under any of the cutting operations, the mere presence of a wound would compel a longer period of convalescence. Experience, which teaches us that supra pubic lithotomy in children has a high mortality, teaches us also that, while the mortality of perineal lithotomy and litholapaxy is about the same, still it is much smaller than that of supra-pubic lithotomy. The almost universal success of lithotomy in children has led many surgeons to be very conservative in substituting litholapaxy.

The mortality in patients under fourteen years of age is about the same for the two operations, but litholapaxy has the great advantage of rapid recovery and the absence of the cutting operation. The size of the urethra in children is much more variable than in adults, and must be determined before selecting the size of the lithotrite. Another important point is the small size of the meatus, a difficulty which can be readily overcome by meatotomy. The first two inches is usually the smallest portion of a child's urethra, and, after passing this point, instruments readily enter the bladder. On account of the reduced size of the instruments, which necessitate the grinding of fragments into very fine particles, the operation is tedious and prolonged.

The evacuating tubes being small, lessens the force of the stream, and it will frequently be necessary to manipulate it so that the eye will reach different portions of the bladder, otherwise particles will be left behind.

A very important fact to be remembered is, that the size of the urethra is so small that there is little spare room, and it is essential that a lithotrite be used which will not become clogged. A lithotrite which becomes clogged may increase a whole size in diameter and thereby do irreparable damage when with-

drawn through the tender urethra. A completely fenestrated blade will overcome this possibility and will render the operation safe.

Supra-pubic lithotomy is an operation which is valuable to those men who find it necessary to operate for stone occasionally. Its greatest value, however, is in cases where the stone is very large and hard.

Multiple stones are considered by some a contra-distinction to litholapaxy, but, if their number be not excessive, they can be disposed of by the crushing operation.

When in older men stone is associated with enlarged prostate, and it is thought advisable to perform prostatotomy or prostatectomy, supra-pubic lithotomy is pre-eminently fitted. We must not, however, lose sight of the fact that the high operation gives a greater mortality, in cases complicated with kidney disease, than does litholapaxy. In these cases, supra-pubic litholapaxy is attended by a higher mortality than is the perineal operation.

In encysted stone, the supra-pubic route is preferable, because it furnishes more opportunity for inspection and greater freedom for manipulation. The same may be true when we have multiple stones to deal with. I quote a case:

S., German, æt. 64. Had been suffering with cystitis for two years, during which time he had passed twenty small calculi about the size of a pea, which were smooth and facetted.

Sounding demonstrated the presence of numerous calculi. This, together with the fact that those passed were facetted, indicated a cutting operation. The prostate was somewhat enlarged, but not excessively so.

Median lithotomy was performed, and 106 stones, ranging in size from a pin's head to a large pea were removed. These were all facetted. There was a prompt disappearance of the cystitis following the operation. A perineal fistula remained, despite attempts at closure.

Two months later, cystitis reappeared. The bladder was sounded and stone diagnosed. The perineal fistula was enlarged and four stones extracted. Relief immediately followed. Recovery, with closure of the perineal fistula followed.

Six months later, cystitis again recurred, when sounding the bladder demonstrated the presence of two stones. They were apparently small, and were removed by litholapaxy.

A period of two years elapsed since the last operation, without a recurrence. The patient at the present time enjoys good health. The number of stones removed in this case was, in all, 132.

Stones, with foreign bodies for their nuclei, may be removed by this route, but I believe that, as a rule, the perineal method is to be preferred, except in very old men, who are the subjects of nephritis. It is rarely possible to diagnose the presence of a foreign body forming the nucleus of a stone prior to its removal; therefore this can have little bearing in the choice of operation. A very deep perineum may make supra-pubic lithotomy the preferable course to pursue.

In connection with the subject of foreign bodies forming the nucleus of a stone, I might report to you a case upon which I operated several years ago.

The patient, a German, æt. 19, gave a negative history. His symptoms were those of vesical calculus. He was sounded, and a stone was found, which, from an examination of the urine, was believed to be phosphatic. The accompanying cystitis was not marked.

Litholapaxy was decided upon. Soon after the passage of the lithotrite and the commencement of the crushing, the jaws became locked so that they could not be easily opened or entirely closed. The instrument could not be withdrawn readily, and gentle traction was necessary to secure its release from the urethra. Wedged in the jaws of the instrument was a piece of black material, about two inches long, which proved to be a piece of black leather shoe string, encrusted with phosphatic stone. The lithotrite was re-introduced, when I succeeded in crushing the stone. During the crushing, I could feel the jaws of the lithotrite cut through another portion of foreign body other than stone. When the evacuating tube was introduced and the fragments washed out, several small pieces of leather, with the fragments of stone, were secured. Not being able to discover any more stone, I made a final washing of the bladder and returned the patient to bed. For several days he remained comfortable, but within a comparatively short time began to complain of a return of the original symptoms. I was now convinced that there was still more leather string in his bladder, but, in order to settle the question definitely, I made a cystoscopic examination, which verified my suspicion. I opened the bladder, by the lateral perineal route, and removed six inches of leather shoestring. The combined length of the pieces was seventeen inches; they were encrusted with phosphatic deposit throughout the entire length. The patient made an uninterrupted recovery.

In pelvic deformitics, and in cases of ankylosis of the hip, it may not be possible to per-

form litholapaxy. In pelvic deformities, the urethra is frequently so deviated from its normal course that the introduction of a staff is impossible. In ankylosis of the hip, it is impossible to place the patient in the lithotomy position, and therefore, in these conditions, supra-pubic lithotomy becomes the operation of choice by necessity. The danger and inconvenience of this route are the likelihood of opening the perineum, the failure of the incision to close, leaving a permanent fistula, prevesical abscess from urinary infiltration, and the trouble experienced in retaining a proper drainage apparatus. The latter is especially so in children. The difficulty of retaining drainage apparatus is increased in children, and constitutes a serious objection to this operation. In old people, the enforced quiet or retention in one position, *e. g.*, upon the back, is in itself an objection, as such restraint is not well borne, and not infrequently it is the beginning of a fatal termination. The most important objection to supra-pubic lithotomy, and the same is true of the perineal operation, is the mortality, which is very much greater than in litholapaxy.

The operation of lateral litholapaxy is attended with difficulties, which are so important that I cannot consider the merits of the operation without first drawing attention to them.

The conditions which cause these difficulties are met with in the extremes of youth and old age. In very many young children, the difficulties which are encountered are the small size of the urethra, the mobility of the neck of the bladder, and the position of the bladder.

The chief difficulty in performing lateral lithotomy in patients of advanced years is a deep and fat perineum complicated by an enlarged prostate. In all instances, when there is any question as to the possibility of delivering the stone through the perineal wound, a Harrison perineal crusher should be introduced and the stone broken up, thereby lessening the liability of injury to the perineal tissues and obviating the necessity of forcible extraction. All stones over one and one-half inches in diameter should be broken before extraction is attempted.

Median perineal lithotomy has very few advantages over lateral lithotomy, and many more disadvantages. The advantages may be summed up briefly. Rapid recovery after operation, the early restoration of urethral urination, and the quick healing of the perineal wound. This operation is preferred by some for children with stones. The limited space it affords for manipulation constitutes one of the strongest objections to it.

The wound in the perineum is, of necessity, small, and the bladder is not so readily surveyed as by the lateral route. The increased liability to injury of the rectum and to the bulb of the urethra is an important disadvantage. The mortality following the median operation is higher than that of the lateral operation. Little shock is experienced in the operation of lithotomy, except in patients who are constitutionally run down or in exceptionally prolonged operations. Children bear perineal lithotomy well. Bleeding can be controlled readily by the use of the petticoat catheter. The causes of death from lithotomy are hæmorrhage, extravasation of urine, pelvic cellulitis with peritonitis due to laceration of the tissues or of the septic origin, surgical kidney, suppression of urine, injury of the rectum followed by sloughing. In addition to the more serious complications, cystitis occasionally occurs, epididymitis, and rarely tetanus.

The sequellæ of lithotomy are not dangerous, but different, and at times almost impossible to correct. They are fistula, incontinence of urine, and sterility.

The advantages which litholapaxy offers in the female over other recognized operative procedures is, that it renders a protracted sojourn in bed unnecessary; that there is absolute freedom from sequellæ which are likely to occur in any of the cutting operations, and that the dilation of the urethra is not required beyond the limit—three-quarters of an inch—thus obviating the likelihood of loss of control of the sphincter. The shortness of the urethra, the infrequency of stricture, and the dilatability of the urethra, makes the operation of litholapaxy in the female simpler than in the opposite sex. The anatomical position of the bladder in the female differs from that in the male, necessitating the holding of the lithotrites in a more vertical position in order to more readily crush the fragments.

The introduction of the finger into the vagina and pressure made against the posterior wall of the bladder, will often times be of aid in grasping the fragments of stone. In evacuating, a short tube is to be preferred.

In rare instances, suprapubic lithotomy may be necessary in cases where the stone is so large that the bladder will not hold sufficient solution to permit of crushing.

1634 *Walnut Street.*

A BRIEF CONSIDERATION OF SOME UNUSUAL TYPES OF FRACTURES AND DISLOCATIONS OF BONES LIABLE TO BE OVERLOOKED.

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It has been said, and not without some foundation *in fact*, that "physicians bury their mistakes," which, literally interpreted, means that if skill and judgment in the administration o-remedies are not properly exercised, and fatal consequences follow, it will very often be diffif cult or impossible to determine after death whether the violence of the disease of a misdirected therapy cut off a life.

This, however, does not so generally apply to surgery; as operative therapy has to deal with physical structure, and is, at least in technique, practically mechanical. It, therefore, follows that, after death, as well as during life, conditions confirming the application of skill, or revealing bad judgment and maladroitness are in evidence.

FRACTURES AND DISLOCATIONS.

In no description of trauma are visible, tangible evidences of mechanical lesion more definite and clear than in the disorganization of bone or the dislodgment of the heads of long bones from their articular sockets; it, however, remains true that, in a considerable proportion of fractures and dislocations, their detection is difficult, if not quite impossible, by ordinary methods.

THE ELEMENT OF DIAGNOSIS IN UNUSUAL TYPES OF FRACTURES AN DISLOCATIONS.

The limited scope of my present effort will only permit me to very briefly and imperfectly dwell on the importance of accurate diagnosis in this class of lesions; and consider a few of the more important.

It may be quite generally conceded, with rare exceptions, as a surgical law, that as far as the therapy of the case is concerned, in very obscure fractures of bone shafts, their definite recognition is not of much consequence in the way of influencing treatment, and hence, generally, it is only in medico-legal cases that positive precision is imperative.

UNUSUALLY OBSCURE OR COMPLEX VARIETIES OF FRACTURES.

1st. Fractures of long or irregular bones near the articulations, without any or very slight displacement of the fragments.

2nd. Fractures associated with sub-luxation or complete dislocation.

3rd. Fractures of the irregular or flat bones —*e. g.*, the vault or base of the skull and face; the scapular plates, or the pelvic bones; the irregular bones, or their apophyses; as the vertebral spurs of the spine, the acromion or coracoid process of the scapula.

4th. Epiphyseal separations. (Simulating fracture or dislocation.)

Beginning from above, may be embraced in this class:

1st. Fractures of the skull—of the vault and base.

2nd. Fractures of the bones of the face.

3rd. Fractures of the lower jaw, through the condyle or the coronoid process.

4th. Fractures of any of the vertebræ.

5th. Fractures of the scapular plate, neck, acromion or coracoid processes.

6th. Fractures of the anatomical neck of the humerus or the clavicle near the acromio-clavicular joint.

7th. Fractures of the rib, near the vertebral or sternal ends.

8th. Fractures at or close to elbow joint.

9th. Fractures at or close to wrist joint.

10th. Fractures of the bones in the body of the hand or foot.

11th. Fractures of the pelvic bones.

12th. Fractures of the neck of the femur or those at knee joint.

13th. Fractures on either end of tibia or fibula.

UNUSUAL TYPES OF DISLOCATIONS NOT INFREQUENTLY OVERLOOKED.

In most text-books on surgery, we will note that in the description of shoulder injuries very much is said on dislocation at the "shoulder joint," as though there were but one articulation here, the humero-scapula, or any other unusual luxations of sufficient importance to merit a more detailed description.

In their order of frequency, the most unusual types of dislocations or subluxations that are liable to be overlooked are—

1st. Those at the acromio-clavicular joint—one of the two shoulder articulations.

2nd. The radio-humeral in the child.

3rd. The chondro-costal in the adult.

There is a very large number of *unusual* types of dislocation, but none are considered here except those which may escape detection on a casual examination.

* Presented at Eastern Medical Society of New York, June 11, 1897.

ON THE EXAMINATION OF A PERSON PROBABLY SUFFERING FROM A FRACTURE OR DISLOCATION.

There are many things to be considered when we undertake to examine one presumed to be suffering from an injury involving the displacement or fracture of bone.

1st. The condition of the patient, whether or not the osseous lesion is complicated by serious bodily injury.

2nd. The degree of impairment in function.

3rd. The proximity of fracture to an articulation.

4th. The visible or tangible signs of fracture.

5th. The date of examination after injury.

The so-called "classic" symptoms of fracture are misleading and fallacious, except in cases where the disorganization of bone is some distance from a joint, or the extent of deformity is pronounced.

In cranial vertebral fractures of the flat or facial bones, or the osseous apophyses, there are no definite, uniform symptoms or signs.

This also applies to fractures of the tarsus, the carpus, metatarsal, and metacarpal bones; and, in fact, to all incomplete fractures, or those not attended with displacement.

MEANS OF DETECTING OBSCURE OR UNUSUAL FRACTURES.

1st. By comparison of the injured with the sound limb.

2nd. By muscular relaxation.

3rd. By posture.

4th. By manipulation.

5th. By skiagraphy.

6th. By anæsthesia.

7th. By exploratory incision.

In obscure cases of fracture, we may press for precision in diagnosis, at our primary examination, or at a later interval.

It should be remembered, that in certain fractures the degree of muscular spasm present is very great, the parts are highly sensitive, and the patient may resent the application of force. The physical state of the patient may interdict any violent efforts. Under these circumstances, it may sometimes be advisable to allow an interval of rest of twelve or twenty-four hours, the limb being locally treated in the meantime until stasis and turgescence, with muscular rigor, have passed off and reaction has set in. Many times in dubious cases after such a rest, have I found definite evidence present of fractures which was entirely wanting immediately after injury.

The skillful application of the Roentgen rays has now so clarified the diagnostic atmosphere in many types of fracture, that we seldom need resort to those differential tests in vogue no later than one year ago. With the extensive research and observations on this subject by Dr. Carl Beck, of New York, all are familiar. Nevertheless, valuable as this aid is, without considerable experience, perfect instruments, careful printing, etc., it is not to be solely depended on. And besides, very often the instrument may not be available, and immediate action may be imperative, when we must fall back on other resources.

Every experienced surgeon is acquained with the value of cautious manipulation, and of posture, as accessory aids, in the diagnosis of fractures; but all are not agreed on the utility of pulmonary anæsthetics in suspected fractured shafts.

My own experience has been that they are of little value, except in fractures or injuries involving the hip joint.

Under their employment very much harm may be done; and besides, it is doubtful if we are justified in applying more force in the diagnosis of fracture than the patient can safely sustain in the conscious state.

DISLOCATIONS.

What has been said of anæsthetics in fracture cases, generally applies with equal force to dislocations; their detection or their reduction.

EXPLORATORY INCISION.

The division of the soft parts, as a diagnostic resource in either fracture or dislocation of articulate bones, can never be justified unless one be prepared to proceed simultaneously with some necessary osseous operation as a complimentary factor.

It should be always remembered that the transformation of a simple into a compound fracture, introduces a complicating element which may, by retarding union or the admission of infection later, imperil the integrity of the limb.

CONSULTATION.

Consultations conducted on strictly ethical principles are always conducive of advantage to all concerned; and in no class of injuries are they more necessary than in those under consideration; it is only important, when practical, that the most experienced practitioner in bone surgery be secured, as no amount of reading or anatomical knowledge can ever supplant practical clinical experience in this class of cases.

THE COURSE TO PURSUE IN DOUBTFUL CASES.

Although it is always satisfactory to defi-

nitely determine the presence of fracture in any given case, yet, caution should be observed in our efforts not to employ undue violence or expose our patient in disorganization of bone-shaft to the possible consequences of deep exploratory incisions. In doubtful cases, then, we should frankly confess, precise diagnosis impossible; and although mechanical adjustment of every kind other than to provide comfortable support to the limb here is quite needless, still, in order to gratify the expectations of the patient or relatives, we may loosely splint them.

It is only necessary, in this category of cases, that we keep them under close observation until muscular spasm has passed off, and till the sanguineous extravasate or intumescence has been resorbed. This may be accelerated by free leeching, soothing applications, the bandage and rest. It might be objected that by such delay, osseous repair or functional restoration would be greatly retarded or impeded; but it is well known that under no circumstances do regenerative processes begin until the deposits of trauma are resorbed and the circulation is well re-established—something, in the average case, rarely occupying less than three or four days.

After the restorative efforts of nature have become well advanced—from ten days to two weeks—the presence of a callus will be quite conclusive evidence of a fracture, though its absence *is no proof* that one has not occurred; for since the extensive writings of the late Sampson Gamgee and Ollier's great work on "Osseous Regeneration," it is well known that the evolution of a callus is no necessary part in the repair of certain fracture. They have maintained, and it has been my privilege to have many times verified it, that when there is *no shattering of bone*, when perfect reposition of the fragments is possible and retention is effective without splinting or firm bandaging, cohesion of the ends is by *primary union, without callus*, sometimes solid union in the adult succeeding within ten days' time.

CONCLUSIONS.

1st. Fractures, difficult or impossible of demonstration, as those fissured vertically, or those non-displaced through the cancellous tissue of the articular ends of long bones, occur, without doubt, more frequently than is commonly supposed.

2d. In injuries of the limbs attended with unusual or doubtful fracture, nothing can justify the application of violence to demonstrate its presence, as in no event are the principles of therapy altered in them.

3d. In this class of cases the patient should be given the benefit of the doubt until, at least, time elucidates it—caution only being observed that the circulation is unhampered and full muscular relaxation is effected.

4th. We should never fail, when possible, to utilize the Roentgen rays as a diagnostic aid, though their use in this direction is obviously limited.

5th. Exploratory incision should be ruled out, unless the fracture is of such description as to demand or justify a simultaneous osteoplastic operation.

115 *West Forty-ninth Street.*

THE PASSING OF PLASTER.*

By EDWARD A. TRACY, M. D., Boston, Mass.,

Fellow of the Massachusetts Medical Society.

At the Atlanta meeting of the Association, in a discussion before this section, Prof. Thos. H. Manley, of New York, made the statement that "Plaster of Paris as a routine treatment for fracture should be discarded." The advanced ground taken by that able surgeon is certainly welcomed by the writer, who believes that plaster of Paris as a routine means of surgical fixation is doomed, and that its wane will be rapid, because of its inherent defects and of the advantages possessed by its rival—wood-fibre splinting.

Routine, unless perfection has been reached, is baneful to progress in every field of human endeavor. It can be so in surgery. Happily, however, in this field of activity, there are willing minds and hands ever ready to welcome whatever tends towards improvement in their art—and hence the power of routine is weakened—it cannot strangle a new method without a trial by honest observers.

It may seem an unimportant point whether plaster of Paris or something better be used in cases requiring surgical fixation; but fractures are frequent, and we shall always have them with us; any amelioration in their treatment or results deserves the attention of the profession.

In this brief article, the writer will state facts relative to the use of plaster of Paris as a means of fixation, and of wood-fibre splinting used for the same purpose. A comparison of these facts will render obvious his reasons for believing that plaster of Paris at no distant

* Abstract from a paper read before the Surgical Section of the American Medical Association, Philadelphia meeting, 1897.

time will be relegated to its proper position—a means of surgical fixation to be employed only when safer and more efficient materials cannot be had.

I.—Facts of the Plaster of Paris Treatment for Fractures.

a. Plaster of Paris is dangerous, and sometimes deadly to the incased limb. F. H. Hamilton's testimony on that point is sufficient—many living surgeons can verify it.

b. It does not, as generally supposed, immobilize the enclosed parts. A moment's consideration makes one clearly understand how futile it is to expect the immobilization of limbs swathed in soft and compressible cotton by a rigid bandage outside the cotton. Supposing fixation to be efficient at first, it is soon destroyed by subsidence of swelling, and later, by tissue atrophy that always takes place in an idle limb.

c. It is destructive of the joint functions of injured joints by preventing the timely application of passive motion to them.

d. Plaster dressing prevents the surgeon's ready inspection of the parts treated—a condition not tolerated in any ordinary wound, and which, for as grave reasons, should not be tolerated in fracture cases.

II.—Wood-fibre Splinting.

Before stating facts relative to the surgical fixation produced by wood-fibre splinting, a short description of the material and the mode of its application may be of interest. The writer described this material (the result of personal experimentation in a pulp-mill) at the Milwaukee meeting of the Association in 1893. He was first to advocate its use in surgical splinting (at that meeting and again in a paper read before the Pan-American Medical Congress, Washington, 1893). The material is made in large sheets, of two thicknesses, to serve all kinds of splinting. A splint can be made by cutting a suitably shaped splint blank from a sheet of the material, moistening it with water, and bandaging the moistened splint form over the part to be splinted.

The shape of the splint blank varies with the case treated. The correct shape for the blank is readily gotten by cutting a paper pattern so as to enfold the parts in the manner we wish the completed splint to enfold them, and then, following this pattern for a guide, by cutting the splint from a sheet of the splint material. The splint, having been made and applied correctly, will hold the parts to which it be applied in fixation, from the moment of its retention by a roller bandage. It should be let dry upon the limb, and after twelve hours, the author's practice is to remove it and then to reapply it, thus getting occular testimony as to the condition of the parts.

Facts Relative to the Wood-fibre Treatment of Fractures.

a. Wood-fibre material is adaptable to the treatment of fractures of all the limbs, it being mouldable directly upon the patient's limb.

b. It produces immobilization of the parts, because moulded directly upon them and retained thereon, without the intervention of cotton-batting, which defeats our object, if it be fixation. This efficient immobilization is easily maintained by keeping the roller bandage snugly applied over the resilient splint; thus, subsidence of swelling, or tissue atrophy, need not interfere with the fixation produced by wood fibre material.

c. It permits the surgeon to inspect at any time the fracture he is treating, by the simple unwinding of a roller bandage. The reapplication of the splinting is easy—there being no pads or compresses to become disarranged.

d. This ready removal of the splinting permits the timely application of passive motion to an injured joint.

e. Wood-fibre splinting is lighter than any other; no complaint is heard from the patient because of its weight—even in cases where the hip and knee are both immobilized.

f. Wood-fibre material is strong, rigid and durable—splints made from it having been worn in some cases (hip fixation) for eleven months. The material is clean, porous, and does not irritate the skin. In many cases, splints have been worn for weeks immediately in contact with the skin, and without excoriation of the skin resulting.

g. No padding is required in splints moulded from wood-fibre material, in most cases it being applied directly over the skin. This is important, for how plaster of Paris or other material can produce immobilization of the bones in a limb swathed in cotton-batting, it is hard to comprehend.

h. Wood-fibre material permits of rigid antisepsis in the treatment of compound fractures, both of the wound, always accessible by removal of the bandages, and also of the splint material, by moistening it with a strong solution of corrosive sublimate. Plaster of Paris, as ordinarily applied, is neither aseptic nor antiseptic.

i. The mastery of wood-fibre splinting readily comes to one possessing a modicum of mechanical ability, and who faithfully follows the instructions given above. No more skill is

required to attain it than is necessary to recognize and manipulate ordinary bone and joint injuries. If the practitioner has not that, he ought to let wood-fibre, plaster of Paris, and such injuries, severely alone.

Though this mastery of the material may be difficult to attain, it would be well worth the effort for the compensatory complaisance which the practitioner enjoys in the conscious power to be able to splint any case that presents itself, he moulding the splint to meet the indications of the individual case. Such splinting is scientific, for it presupposes that the practitioner knows the indications that should be met in a given case, and that he knows how to meet them. It contrasts strongly with the employment of manufactured splints, of which there are several varieties on the market, finely formed with beautiful curves and convenient angles; as a rule, however, we find that our patients have not been made to fit these machine-made splints.

An appreciation of this and of the practicability of employing wood-fibre material, led Marcy to state the rule which, it is believed, will yet govern this branch of surgery: "The surgeon must make a splint to fit the limb—not the limb to the splint."

A demonstration of the practicability of living up to this rule is furnished in the splints here shown, each of which was moulded directly upon the limb of the patient treated, and made of wood-fibre material.

[Splints were shown that had been used upon patients for fixation of the toes, ankle, bones of the leg, knee, hip, knee and hip together, thumb, fingers, wrist, bones of the forearm, the elbow and the shoulder. Also a spinal jacket moulded directly upon a child with Pott's disease. All of these were made from the writer's splint material, consisting of crushed wood-fibre rolled rugosely in sheets, and in which layers of gauze are embedded.]

107 *Broadway.*

A STUDY OF ONE HUNDRED CASES OF ATRESIA AND STENOSIS-VAGINALIS IN LABOR, WITH THIRTEEN FATAL CASES.*

By J. J. E. MAHER, M. D., New York.

The subject of atresia and stenosis vaginalis in labor becomes interesting when we remember the fact that there are about two hundred and twenty-five cases on record; that we have sufficient data to permit of the deduction of general principles for the management of all such cases; that thirty-three of the hundred cases about to be considered were complicated by unusual accidents; that thirteen mothers and forty-one children were lost; and that the dread which most men experience when confronted by such a case is quite unwarranted. The data herein contained are compiled from cases, not specially selected, but gathered promiscuously, and represent *all* that I have been able to find in our city libraries.

The oldest case in the literature, I believe, is that of Louis, observed by him about a hundred years ago, which became noted on account of the discussion it gave rise to among the philosophers and theologians of that time.

As my desire has been to collect the most recent cases, the remotest case is dated 1818.

The specific pathological condition in this hundred cases consisted in the formation of a transverse membrane more or less occluding the vaginal canal, a constricting ring, a long tubular contraction, or a transverse band, offering an obstruction to delivery, and hindering the application of the forceps or other assistance that the insufficient natural forces may demand in the interest of the mother and the child.

I have classified the cases, as they have been styled by their authors, as membranes or septa, stenoses, and bands.

In considering the anatomical characters of these obstructions, four points of the utmost importance in every case were sought for in the demonstration, namely, the site, the calibre of the opening, the resistance, and the thickness. The site was recorded in eighty-six cases. Eighteen were situated at the orifice of the vagina. Two were located in the anterior or first third. Forty five were found in the middle third. Sixteen were located in the upper third. Fully nine or ten of these may be dubiously considered, and, had they been more accurately recorded, would in all probability be found in the middle third. In four cases termed stenoses, the entire vagina was claimed as the site. In one stenosis, the anterior half was said to be involved. The calibre of the opening was designated in eighty-four cases. Two cases of stenosis admitted two fingers. Twenty-one cases were permeable to one finger. In eighteen cases, the opening was characterized as small, minute, etc. In nine cases, the opening permitted the passage of a probe. In fifteen cases, no opening was found. In six cases, where actual measurement was given, the size of the opening varied from $1\frac{1}{2}$ to 25

*Full abstract of paper read in Section on Obstetrics, Semi-Centennial Session of American Medical Association, held in Philadelphia, June 1–4, 1897.

mm. In thirteen cases, the opening measurement was indefinitely and variously designated, as, the size of a pin hole, cedar pencil, millet seed, a pea, a dollar, lentik, a sound in two, a quill in three, a female catheter in two.

The character of the resistance was noted in fifty-two cases. Thirty-one were qualified as firm, dense, or fibrous; twelve as cicatricial, and ten were said to be cartilaginous. Those designated as firm, dense, or fibrous represent nearly a dozen different qualifying adjectives, as, firm, dense, tense, rigid, unyielding, resisting, skin-like, fleshy, muscular, fibrous, adhesion of walls.

The thickness was mentioned in forty-one cases. In thirty cases, the measurement varied from 1½ mm. to 50 mm.; of these, twenty did not exceed 12 mm. In four stenoses, the entire vagina was involved; in one stenosis, the anterior half. In six cases, the thickness was indefinitely given, as, thin, that of the vagina, that of the soft parts, little finger, and in two all the vagina above stricture, which, in one, was situated at 38 mm., and in the other, at 50 mm. from the entrance.

The microscopical anatomy of these obstructions was rarely mentioned in the cases considered, and then merely assumed. M. Odier, however, examined a band that M. Trilat had operated on, and demonstrated that it showed all the elements of the vaginal wall.

The causation was given or inferred in every one of the cases. Forty-two cases were considered congenital. Fifteen of these are assumed to have been such from the histories given. Forty-five were said to have occurred post-partum. The pathological condition herein involved was stated to be necrotic or sloughing vaginitis, and laceration of the vagina following operations on the child, as, forceps cephalotomy, embryotomy, perforation, and protracted, difficult, tedious labors, with the head long delayed in the pelvis. In one case, a neglected tampon, inserted to arrest hæmorrhage after an abortion, is accused; in another, bad management on the part of a midwife removing the placenta.

Pathological causes were assigned in seven cases. In two, leucorrhœa was said to have occurred at the ages of 16 and 18 years. Scarlet fever was mentioned in one case; but, as the author said, there never were any vaginal symptoms at any time. In two, the condition was stated to have been acquired, but it was not demonstrated how. In two others, ulceration of the vagina occurred during pregnancy, and was looked upon as the cause.

To a traumatic cause, I have assigned four cases. A band followed a burn when the patient was a child. A membrane was the consequence of an injection of sulphuric acid to provoke abortion. A stenosis was the result of the treatment of a prolapsus uteri by means of a lead pipe and neglect. Another stenosis was said to have been caused by the application of caustics to the cervix. The post-operative cases, a stenosis and a membrane, resulted from attempts to close vesico-vaginal fistulæ.

The complicating conditions numbered thirty-three.

Hæmorrhage was noted in twelve cases, in which one mother and five children died. The hæmorrhage in some of the cases was due to the incisions made into the obstruction.

Twins occurred in three cases, in which one mother and four children died. This death is accounted for by the cartilaginous resistance of the long tubular stricture, embryotomy of the first child, and a delay of thirty hours before the delivery of the second child.

Contracted pelvis was observed three times. One mother and three children died. This fatal case was further complicated by shoulder presentation and an embryotomy requiring seven hours for its performance.

Impaction was mentioned in two cases, in which the mothers recovered and the children were sacrificed. Prolapsed cord presented once, and was followed by recovery of mother and child.

Abdominal presentations occurred in twelve cases, in which anything other than vertex-presentation was so considered.

The breech presented in five cases, in which all of the mothers and two of the children recovered. The foot presented twice, and one mother and three children succumbed. This death had no respect to the presentation, as this was the second child of the twin case just mentioned.

The arm was found presenting in two cases, in which one mother and one child died.

The left shoulder presented in one case, and both mother and child perished. This case was further complicated by contracted pelvis, as mentioned. Face presentation was observed in two cases, in which one mother and two children died.

In the thirty-three cases thus complicated, we find seven mothers and twenty-four children perished. The diagnosis was brought into question in five cases, particularly in that reported by Delanney, which had been transferred from one hospital to another in Paris, as a sort of object-lesson, and in which Dupaul insisted on a diagnosis of absence of the portio

vaginalis uteri with congenital shortness of the vagina, in which opinion Gréniot concurred. Flamm, Green, and anonymous, mistook the membranous structure for the lower segment of the uterus and the os uteri. Lusk's first impression was, that the dimpled spot was the os uteri.

The *treatment of the obstruction* was by incisions in sixty seven cases, in which seven mothers and twenty-eight children died. In eleven of these the obstruction returned.

By finger dilatation in fourteen, with three maternal and three infantile deaths.

By mechanical means in four cases, in which the mothers recovered and three children died. In one case the obstruction returned.

By thermocautery in two cases with no deaths.

By advancing head in thirteen cases, in which three mothers and seven children died. In one of them the obstruction returned.

Delivery was effected by *forceps* in thirty-two cases, in which four mothers and nine children died; by podalic version in eight cases, with loss of three mothers and six children; by craniotomy in nine, with only one maternal death; by embryotomy in two, fatal for both; by natural forces in forty-nine, resulting in three maternal and fourteen infantile deaths.

The return of the obstruction was noted after delivery by forceps in five cases, by craniotomy in two cases, and by natural forces in six cases. Thus, in 100 cases, thirteen mothers and forty-one children died, and the obstruction returned in thirteen cases.

The fatal cases may be thus summarized:

Case I.—Wallace.—*Canad. Practitioner*, 1883, viii, 353.—3-para, 27 years old. Dense band 3½ ctm. in vagina. Waited for head to dilate, then scraped through with finger-nail and applied forceps. Still-birth. Mother died from sepsis.

Case II.—Pierce—*Am. Med. Bi-Weekly*, Louisville, 1878–'79, x, 220.—2-para, 25 years old. Except the first 38 mm. or 1½ inches, the entire vagina was closed to the size of a cedar pencil, with the feeling of a cartilaginous ring. Incision with scalpel. Dissection of child removed in pieces. Thirty hours later, a second child decomposed, presenting by the foot, came away easily. Mother died from sepsis eleven days later.

Case III.—Snyder.—*M. and S. Reporter*, Philadelphia, 1880, xlii, 316.—2-para, 22 years old. Stricture hard as bone 38 mm. in vagina, 12 mm. thick. No incisions could be made. Decided on hysterectomy. Patient died unrelieved twelve hours from beginning of labor, presumably from internal hæmorrhage.

Case IV.—Martin.—*Beitrag. Z. Gebustch. Med. Gynak.*, Berlin, 1870–'72, i, 62.—1-para, 34 years old. Sharp-edged stricture in middle of vagina. Opening 1½ ctm. in diameter. Treated by warm douches and ergot. Waited for head to dilate, and then applied forceps. Rent in left side of vagina at site of stricture. Patient died delirious the next day.

Case V.—Odier.—*Memoires de la Soc. de Biologi.*, 4 s. iii, 66, 77.—1-para, 19 years old. Membrane having structure of walls, in upper part of vagina, with two small openings. Divided membrane between the openings. Natural delivery of a living child four days after. Mother succumbed to peritonitis after thirty-eight days.

Case VI.—Purefay.—*Dublin Quarterly Jour.*, 1848, v, 560.—2-para, 40 years old.—Thin, sharp, rigid stricture in upper part of vagina, permeable to finger. Chest and arm presented. Dilatation effected by finger and hand. Podalic version. Child decomposed. Mother died at the end of a month, with suppuration and sloughing of the vagina.

Case VII.—Moriz.—*Monatsschr. f. Gebustsk. uns Frauenk.*, Berlin, 1859, xiii, 60.—Vagina closed at entrance by adhesion of walls antero-posteriorly. Obstruction 38 mm. thick. Sound readily pushed through. Urethra dilated, admitting two fingers. Turned child. Still-birth. Mother never rallied.

Case VIII.—Lombard.—*Gaz. Med. de Paris*, 1831, ii, 123.—5-para, 36 years old. Immediately behind meatus and fourchette, a thick and irregular fleshy partition forming two lateral sacs and a median wall. Right sac was 2½ ctm. deep, and left, 5 ctm. Cervix adherent all around. Produced by injection of sulphuric acid, to provoke an abortion. Cut through column and sacks, and left case to nature. Uterus ruptured in middle part. Mother died unrelieved.

Case IX.—Doherty.—*Dublin J. M. Sc.*, 1842, xxi, p. 73.—2-para, 26 years old. Thick band surrounded upper part of vagina, permeable to finger. Face presented, chin to right synchondrosis. Nicked stricture in two or three places, principally posteriorly. Symptoms of rupture appeared. Tried to perforate, but failed. Podalic version and extraction of child. Mother died in forty-five hours from peritonitis. Uterus and vagina found ruptured, but the rent bore no relation to the incisions made by the operator.

Case X.—Doherty.—*Dublin J. M. Sc.*, xxi, 77.—2-para, 22 years old. Firm membrane 38 mm. in vagina. Central opening, permeable to finger. After cutting membrane, found walls adherent up to os uteri. Cut and tore

through. Left shoulder presented; pelvis contracted; uterus drained; eviscerated. Patient died from peritonitis eighteen days later.

Case XI.—Belandin.—*St. Petersburg Med. Ztschr.*, 1862, ii, 26.—Multipara, 30 years old. Five ctm. from symphysis pubis, a cicatricial ring, a second and a third farther up. A recto-vaginal fistula, 1 ctm. in diameter. Conjugate diameter 88 mm. Cut through strictures. Craniotomy. Two and a half hours under chloroform. Died from peritonitis two months later.

Case XII.—Wright.—*Cincinnati Lancet and Obs.* 1875, xviii, 107.—2-para, 25 years old. Membrane and in upper part of vagina pervious to sound. Tried to break through with finger, failing, left head to dilate. After three and a half days, applied forceps to head at outlet. Child decomposed. Mother died four days later with peritonitis.

Case XIII.—Braun.—*Centralbl. für Gynæe.* 1889. § 707.—Multipara, 26 years old; ring-like stricture at entrance, permeable to end of little finger; cut deeply into ring in many places, and put on forceps. While making first two tractions, fatal collapse occurred; uterus was entirely separated from vagina in anterior fornix.

After a careful consideration of all the cases, and especially the fatal ones, a few *general conclusions* force themselves upon us.

1. That from 70 per cent. to 80 per cent. of all these cases are found in the middle third, or at the orifice of the vagina, at which points a predisposing condition may be found in an increase of muscular tonus.

2. That the small size of the opening does not necessarily jeopardize the case, inasmuch as none of the complete atresiæ proved fatal, and among the fatal cases four had openings large enough for the finger to pass.

3. That the resistance can be overcome in every case, as evidenced by the fact that only two of the ten cases termed cartilaginous proved fatal.

4. That the thickness which, in fifteen cases, was stated from 20 mm. to that of the entire length of the vagina, is not an insuperable barrier, for only two of such dimensions were fatal. Of the other two fatal cases wherein the measurement is given, the thickness in one was 12 mm., and the other was characterized as thin and rigid.

5. That there is practically no difference in the character of the structure, site, location of opening, central or otherwise, resistance, or thickness, between the congenital or post-partum cases, which amount to 87 per cent. of the whole.

6. That the complications should not necessarily have been fatal, except, possibly, in two cases—the of contracted pelvis with shoulder presentation, and one of the twin cases.

7. That the various methods of treatment applied, both to the obstruction and the delivery, do not make a bad showing, when we remember that many of these cases were in labor for days before interference was attempted or allowed.

8. That the one grave error that pervaded nearly all these cases, and readily accounts for so many decomposed children, so many nearly exhausted women, and so many ruptures of the uterus and vagina, was a misconceived idea of the powers of nature—a misguided judgment in the plan of expectancy in the face of an unnatural condition which withheld the proper aid until the patient was so far exhausted that little seemed to be hoped for on this side of the grave.

To conclude, it must not be forgotten that in the three cases of atresia and stenosis vaginalis that I have met with, there was always to be demonstrated an inflammatory condition of the mucosa behind the barrier. This fact was not mentioned in any of the cases I have found in the literature; yet it would easily account for the remarkable putrescence observed in many of the cases, that was so mysterious and unexplained in its occurrence.

In these days of anæsthetics, asepsis, and antisepsis, one is impelled to believe that the proper course to pursue is to obliterate the obstruction as soon as discovered in labor or before it; anæsthesia if necessary, and vaginal douching. If labor has begun, terminate it as speedily as possible, in the most feasible manner.

For dilatation, use can be made of a uterine dilator, a rectal, and a three or four bladed vaginal speculum, which may be covered by some rubber contrivance, such as catheter, rubber bag, and so forth, previously rendered aseptic, and in this way diminish the liability to cut the constricting tissues with the edges of the instruments. Further operation on the stricture will rarely be necessary.

34 *West Twenty-Fifth Street.*

For Vomiting of Gastric Cancer.

Dr. A. Robins' formula:

℞.—Picrotoxin.
Morphia muriate āā.....gr. iij.
Atropia sulphate (neutral)...gr. $\frac{3}{5}$ths.
Cherry-laurel water.....gr. dc. Mix.

S. Five to eight drops five or ten minutes before meals.—*Ex.*

TWO HUNDRED AND FIFTY BASSINI OPERATIONS FOR CURE OF INGUINAL HERNIA, WITHOUT MORTALITY.*

By W. B. De GARMO, M. D., New York, N. Y.,

Professor of Special Surgery (Hernia), New York Post-Graduate Medical School and Hospital.

This paper consisted of a report of 250 operations, done upon 216 patients, 34 cases having been operated upon on both sides. Fifty-two of the cases were females and 164 were males.

Attention was drawn to the fact that these operations were not selected cases, their ages varying from five months to over eighty years of age. Fifty-five of the operations were on patients under 14 years of age, and sixteen of them were over 60 years of age, and two were over 80. The cases operated upon at the extremes of life were not voluntary operations, but done for irreducible or strangulated hernia, and the Bassini method carried out upon them in closing the canal. The child five months old had strangulated scrotal hernia on the right side, and was operated upon for the cure of a large scrotal hernia on the opposite side at the same time, and made a perfect recovery within ten days.

The character of the hernias operated upon is indicated by the fact that 93 of the cases had scrotal hernia, 55 hernias were irreducible, and 16 were strangulated.

In 55 of the cases, it was necessary to excise more or less omentum, and this was done in every instance by using multiple silk ligatures, as described by Dr. De Garmo in the *Annals of Surgery*, June 2d, 1895.

The largest hernia operated upon was two feet in circumference, reaching two-thirds of the distance to the knee, in a man fifty-three years old. The tumor contained large and small intestine, a quantity of omentum, and a distended bladder. This man had called attention to the fact that, in urinating, he was obliged to press the tumor violently against the thigh with his hands, but the exact condition of the bladder was not recognized until after the operation.

Twenty-four hours later, it was found that he was passing very little urine, and a catheter could not be passed. The following day, the bladder was opened through the perineum and free drainage established. Notwithstanding the extent of the secondary work, the man recovered from his hernia operation by primary union, and from that on the bladder, promptly, and has now remained cured for two years.

It was believed that the success of the Bassini operation was due largely to two facts: First, that all abnormal structures were cleared out of the canal; and, second, that two muscular layers were brought down to form a new posterior wall.

There was found in the canal, aside from the hernial sac and its contents, the ovary in three instances, the testicle in nine, and enlarged veins in a large number of cases. In the canals of a young woman, thirty years old, in perfect health and of athletic build, were found masses of varicose veins, having every appearance of extreme varicocele of the cord as found in the male. These were ligated and cut away, but their source of supply and cause were unknown.

Bunches of extra-peritoneal fat were commonly met with, in masses larger than one's thumb, and, in one case, as large as a good sized hen's egg. This man had scrotal hernia on one side, and was supposed to have complete inguinal hernia on the other. It was found to consist merely of this fat coming down from in front of the peritoneum. It was loose in the canal, hanging by a pedicle, and he could, therefore, push it up beneath his truss.

It is believed that men who give the history of having been fat, and then getting thin and developing hernia, are cases of this kind, where the canal has previously dilated by masses of fat.

Cysts have been found in a large number of cases, usually connected with the cord. In one case, it took the form of multiple small cysts, the whole resembling a small bunch of white grapes.

The time required for the complete healing and discharge of the patient was fourteen days in 114 cases, primary union having been obtained in 207 cases, 84 others leaving by the twenty-first day. One physician, operated upon, left the hospital on the evening of the eleventh day, and went by train to Detroit. Five physicians were in the list of patients operated upon.

In suppurating cases, the infection was in every instance immediately beneath the skin, and did not extend to the deeper tissues. In one case, the wound was infected by a gonorrhœal discharge, the existence of which was not known at the time of the operation. Patients, whose skin has been abraded by truss wearing, are likely to have suppuration. Contrary to expectation, only in a single instance has recurrence taken place in those cases where was suppuration, and in this case it was

* An abstract of a paper read before the Surgical Section of the American Medical Association, Philadelphia, June 2d, 1897.

known that failure was in no way due to lack of primary union. In only one instance was there suppuration in a child under fourteen years of age, they apparently not being at all liable to this accident. In the case noted, it was a second operation, where there was considerable matting together of the tissues.

The double operations were all done at the same time, as also some cases of inguinal and umbilical hernia. One man of fifty-two was operated upon for double inguinal and right femoral on the same day, and has remained cured of his three hernias for nearly two years.

In my early operations, owing to lack of faith in the lasting properties of kangaroo tendon or chromacized catgut, silkworm-gut was used as a suture material in the deep parts, and allowed to remain in. This was used in twelve cases, and, in four of these, considerable difficulty was afterwards experienced by the sutures coming out. In eight, they were perfectly retained, and have caused no irritation in the tissues. In one instance, sutures came out nearly one year after the operation. This material was therefore entirely abandoned, and kangaroo tendon exclusively used. In none of these cases has there been a recurrence of hernia, even where the sutures came out.

It is not attempted to disprove the statement of those who claim that catgut, plain or chromacized, is just as good as kangaroo tendon, but no change will be made from the latter until an equal number of cures has been shown by the former.

The reader of the paper felt that he had reason to congratulate himself upon the fact that, in this entire list, there were no deaths, and it was believed that this was the largest number of operations for the cure of hernia ever reported without a single death.

The permanence of the cure is considered next in importance to the safety of the operation. The reader predicted in a paper before this Section, in Baltimore in 1895, that the permanent cures from the Bassini operation would be at least 90 per cent., and he was now convinced that the estimate was too low, and did not hesitate to raise it to 95 per cent., with five years' duration of cure after the operation.

None of the present series of cases had been operated upon more than three years; 150 had gone over one year after the operation, and in no instance, except of actual recurrence, has a truss been applied.

All recurrences had taken place inside of six months after the operation, and there were six out of the 250. Of the six recurrences, three have been re-operated upon, and apparently with success, leaving only three actual recurrences.

By notes made at the time of the first operations, the real cause of failure was known in every instance, and the following *report on recurrent cases* was submitted:

I. *My first recurrence* was in a perfectly healthy young man, twenty years of age, operated upon on June 3d, 1895, for scrotal hernia of recent origin. The sac was tied off at the peritoneal surface and removed, and the operation completed in the usual manner. He left the hospital on the fourteenth day, perfectly healed, and four months later fell into an open trap doorway, falling violently upon his abdomen across the edge of the floor. One week later a bulging across the line of the incision was noticed, and he was re-operated upon February 6th, 1897, so far with apparent success.

II. *The second recurrence* was in a boy six years old, operated upon for congenital hernia June 4th, 1895. Primary union, and left the hospital on the fourteenth day. Five months later, he developed a protrusion at the line of the incision, while struggling violently with the family physician and his father, who were trying to remove a piece of wood from the penis. Re-operated upon on February 15th, 1897, with apparent success.

III. *The third recurrence* was in a man thirty-nine years of age, who had had a large and troublesome hernia for many years. Operation November 8th, 1895, and left the hospital on the fourteenth day completely healed. This man was not seen until after his entrance for the operation, and it was not discovered that he suffered from an enormous varicocele on the same side. It was noticed at the time of the operation that the cord was large, but nothing was done to it. As soon as the man was on his feet, it was seen that the varicocele was very liable to reproduce the hernia, which it did within six months of his leaving the hospital. Re-operated upon on May 11th, 1897. The varicocele and all abnormal veins in the canal were removed. The cord was found in size fully as large as one's finger, and was reduced to about the size of a lead pencil. This man has just left the hospital entirely healed. There was no apparent change of circulation in the testicle after this change in the size of the cord.

IV. A man, thirty-seven years old, weighing 225 pounds, had left, irreducible, scrotal hernia the size of a cocoanut. Upon first examination believed to be a mass of omentum, but the operation revealed the fact that it was largely bowel, and proved to be the sigmoid flexure

turned out through the canal without peritoneal covering. Had not the opening been made to the internal ring, the bowel would have been mistaken for the hernial sac and opened. This man had fatty degeneration of the abdominal muscles to such an extent that the sutures would tear through the tissues readily under moderate tension. Hernia gave evidence of recurrence in about six months, and a light truss was applied and will be continued. Second operation not advised.

V. Man, forty years old, six feet five inches tall, weighing about 225 pounds, but not a healthy looking man, had had left, scrotal hernia since early childhood, and irreducible for many years. A large mass of hypertrophied omentum was removed. Case was very difficult for operation, and in closing the structures, by mistake, the aponeurosis of the external oblique was carried under the cord for a part of the distance on the first row of sutures. On account of the tedious previous work, and the condition of the patient, time was not taken to correct. Second operation not advised, on account of being a bad case for anæsthesia.

VI. Man, fifty-five years old, of frail build, but apparently good health, had had right, inguinal hernia for several years, which proved rather rebellious under truss treatment. He took ether nicely at first, but after the canal was opened, seemed to collapse, pulse dropping to forty and respiration very feeble. Omentum was firmly adherent to upper part of canal. The necessity for the prompt termination of the operation seeming evident, the upper part of the sac, with adherent omentum, was inverted, a suture of kangaroo tendon was placed so as to bring the peritoneum, transversalis and internal oblique as closely around the cord as possible, and the suturing of Poupart's ligament to the deep muscular structures was done in the usual way, except that it was hurriedly done. The patient was only on the table twenty-five minutes, and came promptly out of the ether in good condition. A small quantity of ether had been judiciously administered. Patient made a rapid recovery, but showed evidence of recurrence within three months. Light truss applied and now being worn.

56 *West 36th Street.*

For Mumps.

℞.—Ichthyol.
Lead iodide āā.....gr. xlv.
Ammonium chloride...gr. xxx.
Lard..... ℥i. Mix.

S. Apply to swollen glands three times daily.

NEURASTHENIA AN ABDOMINAL NEUROSIS.*

By G. BETTON MASSEY, M. D., Philadelphia, Pa.

As clinicians, we are all interested in the practical relations of that truly multiphase disorder, neurasthenia. Described and named first about thirty years ago by the late George M. Beard, it is only now being differentiated from hysteria, for which it is often yet mistaken. That the two diseases are widely different, I think all neurologists will agree; yet it is by no means easy to state briefly in what the differences consist. As the attempt to do so would require a treatise by itself, I shall only say here that *hysteria* is essentially a disease of the brain, chiefly manifested by evidences that the cerebral neurons, mainly concerned in the evolution of certain moral conceptions, and in particular the control of the will-power, fail to connect with their proper end organs, whether the individual wishes them to do so or not; and that this paper is an attempt to suggest that the trouble in *neurasthenia* is also a break in the circuit of neuronic connections, but that the neurons affected are those situated in the visceral ganglia of the abdomen.

So far as known to me, no pathological lesions of the solid structures have yet been shown to be peculiar to neurasthenia; hence, it is placed in the class of neuroses or disordered functionations of the nervous system. Beard, and subsequent writers and practitioners, have tacitly assumed the seat of this disordered nervous action to be in the cerebrospinal system, making the disease practically synonymous with nervous prostration or exhaustion from excessive expenditure of cerebrospinal energy. This, I think, is disproven by the fact that many persons do a prodigious amount of work without such consequences, and the further fact that the disease is most frequently found in persons unburdened with active concerns of any kind, or who, if actively engaged at all, are not engaged with affairs of a kind to claim even a healthy amount of either work or attention. I do not mean to say that all neurasthenics are insufficiently occupied, for some are the hardest kind of brain-workers, and many are only prevented from performing a normal amount of work by reason of their affliction; but I have been totally unable to verify the impression that overwork had any causal relation to the disease,

* Read in Section of Neurology, American Medical Association, at Philadelphia, June 3, 1897.

though worry or anxiety are most potent exciting causes.

Since the notable work of Bouchard on auto-intoxication—(1) by the absorption of toxic agents from imperfectly digested food, (2) by the retention and accumulation of normally produced materials that should be further elaborated and changed, (3) by the production of abnormal substances within the body, a new light has been thrown on this difficult subject. But little consideration is required to convince us that this furnishes an adequate explanation of the mental symptoms of neurasthenia as a simple beclouding of the normal physiologic action of the brain by poisonous elements in the blood. The grosser forms of auto-intoxication, such as by decomposing food within the alimentary tract and the retention of excretions, produce nervous conditions of a different character, it is true, for the more delicate affection under consideration is mainly connected with the other forms of auto-intoxication mentioned, wherein biochemical processes are arrested and abnormal products persist within the blood.

But a reference of the symptoms of neurasthenia to auto-intoxications does not give us a complete key to its causation. To get at the true cause of this stupidity of organs we must go a step further back, and that brings us at once to the nervous mechanism controlling the viscera engaged in this biochemical elaboration.

Now, it should be realized at once as a cardinal fact that the automatic functional activity of all the viscera of the abdomen is presided over by the sympathetic system of nerves, and it necessarily follows that any widespread or synchronous deviation from their normal functionation points to deficient innervation from this source. Individual organic incompetence does not, of course, point definitely to this source, but conjoint incompetence does.

Strange to say, this obvious explanation of auto-intoxications, due to failure of the liver, small intestine, and other viscera, to change albumoses into serum albumin, urea, etc., has received scant notice, if any at all, and no other adequate cause for these associated organic dulnesses has been given. Many physicians have completely lost sight of the important functions of this supposedly secondary nervous system, and a well-known neurologist and brain specialist of Philadalphia even denied its existence as a nerve centre in a discussion at a medical society something over a year ago. That these visceral ganglia are endowed with initiative or centric powers, is amply proven by the simple fact that if the heart or intestines of a mammalian be completely removed from their connections with the body, the muscular tissue will continue to functionate for some minutes, and in reptiles for some hours; and this when only that portion of the visceral ganglia situated within the substance of the organs has been removed with them. If this is so of muscular functionation, it must be true also of other organic actions.

No better illustration of the several parts of the nervous system can be found than the systems of electric distribution of intelligence, light, power, heat, etc., that are found synchronously working in a great city, only the comparison is yet imperfect by reason of still existing imperfections in municipal utilization of this force. Grossly speaking, the following analogies may be drawn: The neuronic centers of the several nervous systems may be likened to separate sets of dynamos, correlated and coordinated in action by electric signals and orders, but distinctly separate as generators of currents adapted to the purposes of the transformers to which their wires run. The cerebrospinal system may be represented by the telegraph and telephone systems and the traction power system, the central nerve cells corresponding to the dynamo plants, the nerves to the wires, and the terminal organs in the skin, muscles, etc., to the telephones, receivers, lamps, motors, etc. If, now, we imagine a second set of wires running from this main plant to another system of dynamos built for special work in factories, chemical works, and other industrial plants, and these connecting wires to transmit a regulating action to the steam engines operating the second system, rather than the power itself, which is generated for this plant by the second system of dynamos, we have a crude picture of the mutual dependence and mutual independence of these two important systems of nerve-force generators and transmitters.

Both physiology and chemistry tell us that the animal organism is rather a republic than a kingdom. There is no one spot that furnishes so-called vital force to the whole, but each organ manufactures its own vital effects by a special appropriation of energy from its animating neurons in the visceral ganglia connected with it. And since the most advanced physicists tell us that energy can neither be created nor destroyed, we must conclude that the neuronic center of the ganglia merely stores energy that has been released by the atoms in their ever-changing dance of molecular transformations.

Vital force is, then, only atomic force after all, and probably we should rather regard the sympathetic nerve centers as analogous to storage batteries instead of dynamos, for the storing up of force released in the retrograde of anabolic molecular changes, and the application of this force to the building up or katabolic molecular unions of atoms within the viscera, for it should be understood that force is an inherent quality of atoms, which is absorbed and rendered latent when atoms combine in the higher molecules, as in living tissues, and rendered apparent and free when these higher molecules are broken up into simpler excretory forms.

Picturing thus the sympathetic ganglia as force-storage batteries of animal life, we have a key to the cause of the more delicate auto-intoxication from failure of the important abdominal laboratories to receive a due portion of released energy from these distributing mechanisms. The true seat of the disease is, therefore, traceable to the ganglia themselves, though it should be remembered that its intensification may be due to a reaction of the intoxicant effects on the causal weak spots, thus creating a vicious circle of action and reaction.

As to the true nature of this neurosis of the sympathetic ganglia, we are, of course, yet in the dark, as we have so long been concerning similar neuroses of the cerebral centers; but it should not be forgotten that recent investigation and reasoning have presented us a most plausible hypothesis, based upon actual observation, which refers such phenomena to retractions of the processes by which the nerve cells or neurons communicate with their end organs. An actual instance of amœboid movement of the processes of the neurons has been observed in an invertebrate animal. It is, therefore, reasonably conjectured that the nerve cell is ever touching, with its finger-like processes, the numberless wire-like conductors by which it is surrounded, and thus makes and breaks the circuits of its energizing influence in accordance with its own inherent energy. Hysteria, as before said, is probably a retraction of certain cerebral neurons from the spinal motor centers, thus breaking the circuit of the transmission of will power. It is equally conceivable that this sympathetic nerve-failure of neurasthenia is likewise due to a retraction of the neuronic processes of certain neurons of the visceral ganglia, thus breaking the circuit of the transmission of secretory energy to the visceral end organs.

Now, of course, this is merely an hypothesis rather than a demonstration of the true nature of neurasthenia, even though founded in part upon the proven facts of physiology and physics. To the laboratory, and in particular to clinical investigation, must be relegated its proof or disproof.

That your own experience gives partial clinical evidences of its truth, nevertheless, I have no doubt, and this is specially shown in the failure of the psychic and spinal rest elements of the rest cure to favorably affect true neurasthenia, many cases being actually made worse by the seclusion and discipline that are so valuable in hysteria and the hysterical complications of neurasthenia. Some patients will even gain weight under the method, only to lose it again when resuming ordinary existence, the old symptoms meanwhile persisting in full vigor. A larger proportion of such cases would fail were it not for the beneficial effects of the milk diet, which reduces the opportunity for the development of toxic substances to a temporary minimum. That cases of the more delicate auto-intoxications should be made worse by seclusion, inactivity, and an increase of their opportunities for introspection, is manifest, as well as the equal futility of treating a lounge-ridden woman, not in need of mental discipline, to a *similia similibus* dose of rest in bed.

If neurasthenia is a bio-chemical auto-intoxication, due to deficient automatic activity of the neuro-glandular mechanisms of the abdomen, our therapeutic efforts should be directed primarily to the abdomen itself, and should consist of appropriate combinations of mechanical, electrical, and medicinal agents of a character that will stimulate both the nervous and glandular organs to a proper performance of their work. Mere antisepsis of the digestive tract is useless, while the prevailing habit of many practitioners of dosing these patients with various pre-digested foods, malt extracts, and mere cerebral stimulants, cannot do otherwise than add further impurities to the circulating fluid, already overcharged with toxic materials.

1636 *Walnut Street.*

Lassar's Paste for Contagious Impetigo.

℞.—Acid salicylici.....ʒss.
Petrolati..... .....ʒj.
Zinc oxidi.
Amyli āā..... .....ʒss. Mix.

S. Remove crusts with olive oil compresses, cleanse skin with hot water and soap, boric acid solution, etc.; then apply Lassar's paste.—*Pediat.*, Oct., 1896.

REMARKS ON CONSUMPTION AND ITS TREATMENT.

By A. T. CUZNER, M. D., Gilmore, Florida.

During an experience of thirty years as a practitioner, I have had occasion to treat a large number of cases of phthisis pulmonalis, and have carefully studied the many theories put forth, and the many remedies advocated in accord with such, yet have failed to note any diminution of the death-rate.

The majority of the profession have apparently accepted the "germ theory" as the basis of treatment. The acceptance of this theory is likely to entail great hardships upon the victims of this fell disease.

The *Medical Brief* of February states that "the Health Officer of Texas recommends the quarantine of consumptives on the ground that the disease has been proven to be contagious." These proofs consist largely of the bare assertions of a few medical theorists, and laboratory students (disciples of Pasteur).

If the *germ theory* holds good in consumption, we ought to be able, from the many germicides we possess, to destroy the bacilli whenever found and thus relieve mankind of that fell curse that claims one-fifth of all the deaths that occur in the civilized world.

The tubercle bacilli have been found in the sputum of perfectly healthy men. It has failed to make its appearance in many cases dying of tuberculosis.

Formerly consumption was considered an inherited disease. In consequence, every suspected patient was subjected to a rigid examination in family history in regard to disease, etc. This view has been modified into a belief of *disease diathesis.* But diathesis is not disease! It is only a tendency or predisposition to take on disease! This may be inherited or acquired. "Privation of food, defective sanitation, and a low resisting power all contribute to the development of disease."

There can be no doubt, however, that the germ is an ever-present factor in most diseases. But germ diseases should be considered from two standpoints—that of the germs themselves, and that of the soil in which they proliferate. Occupying the former, we should seek to destroy and exterminate the germs themselves; and the latter, we should strive to render their victims immune.

There are two ways of accomplishing the last result. *First*—we can fortify the system so as to bid defiance to the microbe; or, *Second*—we can introduce into the body some substance that will render it (so to speak) immune.

Professor Buchard in his recent work, (*Lecons sur Intoxications*") says: "That which renders possible the development of an infectious disease is not the accidental meetings of a man and a microbe. Such encounters are constant, but are generally without result. Microbes, even the most dangerous, besiege us. They are spread about us by nature with the same prodigality with which she distributes the pollen of flowers and other fertilizing material, notwithstanding their reproduction is rare.

Infectious maladies are thus accidental, since it is but rarely that the infectious agent finds favorable circumstances for its development and multiplication, after its penetration of the organism."

"The healthy man is not hospitable to microbes. Although constantly invaded, he reacts against them, and in this battle generally maintains the ascendancy to such a degree that even the presence of the disease is often not apparent."

"It is not the same, however, when this vitality is lowered; then his means of defense are diminished. Then it is that certain microbes may invade his body, the health of which is impaired, the consequence of some disturbance of nutrition, and chemical constitutions of the organs modified." (*Modern Medicine*).

Second.—The last process was the dream of Koch that did not materalize in respect to consumption. This last view is still held by *serum-therapists*, to the neglect of those processes and modes of life best fitted to fortify the body against the ravages of the microbe.

As to treatment of this disease—the scourge of the human race—the first and most important consideration is how to increase and conserve the vitality of our patients.

Professor A. Lutaud, of Paris, says: "The fundimental basis of all rational therapeutics, must be to restore the tone and reinforce the power of resistance of the tissues. The organism must be placed in a condition, not only to provide for daily needs and to resist vicissitudes of temperature, humidity, etc., but to enable it to resist the attack of enemies in the form of the pathogenetic microbes. It is, above all, necessary to prevent that devitalization of the tissues which renders them an easy prey to the marauding bacillus."

Dr. Hughes Bennett, of the Dublin Hospital, whose experience with consumpton was no doubt greater than any living physician, says; "In my opinion, cough mixtures are next to useless, if not harmful. As we improve the appetite and digestion of our patients, adding

to this tone and vitality, the cough will be moderated and the disease arrested."

In order that the conditions outlined above may have the best chance of being brought about, it is necessary that the patient should have the largest amount of fresh pure air and sunlight they can attain with comfort To insure this, they should reside in a country where the climate has the smallest average variation of temperature, and has the greatest number of sunny days in the year. He should have plenty of moderate exercise in the open air, but not to the extent of fatigue. The bowels, kidneys and skin, should be kept active, in order that the effete, wornout and toxic material may be properly eliminated from the body, thus preventing antitoxic effects of the disease.

As to the administration of drugs, I leave their choice and mode of application to the common sense of the qualified physician, who will have to be governed by the condition of his patient from time to time.

There are no *specifics* in this disease.

The only remedy I will venture to advise is *nuclein.* It is a great promoter of reconstruction in the tissues. It also has the effect of increasing the number of leucocytes in the blood.

With regard to diet, it should largely consist of animal tissue. Eggs and milk should preponderate over other animal foods. I prefer to give the eggs raw when tolerated. Bone marrow is of greater value than cod liver oil. Fresh fruits should be partaken of freely.

Heavy meals should be avoided, and the patient should partake of small quantities of food between meals.

The drinking of hot water freely will largely help to eliminate the toxin, the result of the disease. The bath should be partaken of as often as possible for the same reason.

TREATMENT OF COLLES' FRACTURE.*

By EDWARD A. TRACY, M. D., Boston, Mass.

In 1814, Colles, of Dublin, published his observations on the fracture, which to-day deservedly bears his name. Previous to that time, this injury practically masqueraded under the description of backward dislocation of the wrist or forward dislocation of the lower end of the radius; for such dislocations were considered common by the masters from Hippocrates down. The nearness of the fracture to the wrist-joint, the peculiarities of its anatomical surroundings, the absence of the characteristic sign of fracture, unless specially sought for, and, finally, the teachings of the masters—all served to hinder the recognition of the actual occurrence in this injury—fracture. Therefore to Colles will ever be due our appreciation and gratitude, for the correct diagnosis of this injury, as correct treatment in surgery, is dependent upon right diagnosis even to a greater degree than in medicine.

Since the recognition by Colles of the real nature of this injury, there has been a marked tendency, till within recent years, to overtreat it, with more or less baneful results. Sir Astley Cooper advised that four or five weeks be let to elapse before passive motion, in the aged, be attempted. He remarked that recovery is slow, it being sometimes six months before the finger motions were restored. Agnew, Bryant, Moullin, Walshe, and McClelland, all recognize that the stiffness of the wrist and fingers is due to fibrinous exudations around the tendon sheaths, about the seat of fracture. Bryant states that passive movements ought to be employed by the surgeon at an earlier period than he has been wont to; but he doesn't specify the time. Moullin advises passive movements of the fingers from the first day, and states that to prevent stiffness of the wrist he has begun gentle manipulations on the fourth and fifth days with excellent results. The writer believes that Moullin's instructions should become the general practice. He (the writer), in several cases, after reduction of the fracture, has moulded a piece of wood-fibre splint material over the dorsum of the forearm and hand in a semi-prone position—the hand in line with the forearm. This bandaged over the parts he finds sufficient protection for them. It does not interfere with passive motion of the fingers from the first, and is readily removed and reapplied to permit of passive motion to the wrist-joint. It is moulded directly over the skin, and requires no padding or compress. In these cases, he has carefully caused passive motion of the wrist-joint from the fifth day and discarded the splint on an average of twenty-four days. It would appear to the writer that the treatment of Colles' fracture would thus be formulated:

1st. Reduction, not always easy.

2nd. Protection, by a simple retentive appliance, while correct reunition of the bones takes place.

3rd. Passive motion of the fingers and thumb from the first day; of the wrist, carefully, from the fifth day.

99 *and* 107 *Broadway.*

* Abstract of paper read at the Philadelphia meeting of the American Medical Association, June 4, 1897.

Correspondence.

Adherent Placenta and Sepsis.

Mr. Editor,—In the issue of May 14th, Dr. C. R. Cullen endeavors to prove that a case of puerperal sepsis, published January 22d, was caused by the injudicious use of a bandage, which he is pleased to designate "an obstetrical straight-jacket." He accuses me of giving only a part of the truth. Let us see who has been the more careless in handling "the truth, the whole truth, and nothing but the truth."

He states that "from erroneous reports circulated in the neighborhood that I would not administer chloroform in obstetrical practice, another physician was called to attend Mrs. P. in her confinement." I know nothing about the reports; but it would appear that one who had practiced in a neighborhood as long as the Doctor, and whose plan of procedure, in that part of labor where attention is directed to the alleviation of the pain, is well known to every mother, should have established a reputation that could not have been so easily shaken or misrepresented. However that may be, the *true reason* why I delivered Mrs. P. is, that I was the family physician.

As well as I can gather from the remainder of the communication, his basis of complaint may be placed under two headings, viz: 1st. *The statements obtained from the husband and a colored midwife, relative to the management of the case;* and 2d. *The application of the bandage, or "obstetrical straight-jacket"*

To satisfactorily confute the first, I cannot do better than invite attention to the following certificate of the husband—*i. e.:*

"Gaines' Mill, Va., May 30, 1897.

"This is to certify, 1st. Because Dr. C. did not give chloroform in labor cases was not the reason I did not engage him; 2d. I cannot positively say that a douche was or was not given the next morning, although I did tell Dr. C. that it was not; 3d. I know nothing about telling Dr. C. about any odor on third day, and can say there was none at that time that I could detect; 4th. The bandage was changed before the fifth day, and as often as necessary. [Signed,] P——."

I am sorry that I did not think it worth my time to secure any evidence from the colored midwife, but the fact was, I thought the truths contained in the notes of the case, taken at the time, were decidedly more reliable than could be obtained from such a leading member of the Ananias group.

Now for the second. For the sake of argument, let us suppose it was wrong to use the "obstetrical straight-jacket." Then why did the consulting physician allow me to employ it without offering any protest against its use? He was present, and saw it applied the first time after delivery. Can it be that he was uninformed of the injurious results that he would have us believe would inevitably follow its use, prior to his obtaining letters from *unnamed* professors of obstetrics and gynæcology which bolstered up his memory? Or could it have been that he was so far neglectful of the patient's recovery as to jeopardize her life? Or was it that he was too busily engaged counting safety-pins to allow so trivial a thing as a woman's life to claim his attention or consideration?

During my obstetrical practice, I am quite free to confess that I have never given a uterine douche to a husband, and I can well understand why he denies the same; but to the patient I gave a uterine douche the next morning following delivery, as shown by my clinical notes, and which she cannot deny. To have done this, I must have removed the "obstetrical straight-jacket." After delivery, she voided urine voluntarily, at least every six hours; and this necessitated the removal of the "obstetrical straight-jacket." The Doctor will learn considerable from the fourth statement of Mr. P. On the third day, her bowels were moved, and the "obstetrical straight-jacket" was not the receptacle of the evacuation. Another important item to which I would direct the doctor's attention is the *antiseptic* pad—made so by creolin ʒij to warm water Oij—which was placed over the external genitals, reaching well from above the symphisis pubis down to and over the anus, and changed as often as required, as indicated by the degree of soiling from the lochia. This in itself was quite sufficient, not alone to cause the removal of the "obstetrical straight-jacket," but to prevent its infecting the genital tract. From these undeniable truths, it will be seen that the "obstetrical straight-jacket" was removed and changed whenever required by the demands of nature, or whenever soiled. On a conservative estimate, it is quite safe to say that the "obstetrical straight-jacket" was changed at least three or four times before the fifth day.

I deny as untrue every statement which the doctor says happened on the third day, and refer to Mr. P.'s third statement to show that he had no authority to make them.

I am fully in accord with the doctor in agreeing with Dr. Kober, that one of the many

causes of puerperal fever is the absorption of noxious products resulting from *decomposing membranes, tissues*, or blood, either in the vaginal or *uterine cavity*. If I were a bit skeptical about this point, conviction must needs follow when I saw the decomposing membranes brought away by my curette on the sixth day after delivery.

Let me throw a side light upon some of the opinions of the *unnamed* professors of obstetrics and gynæcology that he would have me accept as recognized authorities. (1) "A distinguished professor" of ? "writes that he had used the wide bandage in a hospital, but has never used it in private practice." If the doctor will consult (a) the statistics of the Rotunda Hospital, Dublin, Ireland, and (b) investigate the technique employed in the management of women after delivery, he will find that the former is conspicuous by the few number of septic cases, and that in the latter the same "obstetrical straight-jacket" is used which I am guilty of having employed. These reports are based upon hospital and *out-door* or private patients, and by far the larger number fall among the latter class. (2) "The editor of an obstetrical journal candidly admits 'that he never heard of such a bandage'"; and yet he would have me accept one so poorly informed as an authority. (3) The professor of gynæcology, having been misinformed as to the kind of binder used, as well as the time it remained on before changing, may well be excused for his answer. (4) The professor of obstetrics must have received a duplicate of the letter written to 3. (5) This professor of obstetrics talks about meddlesome midwifery, and seems to have shunned the "obstetrical straight-jacket." (6) This obstetrical professor talks about bandages in general, and I pit his experience against that of Professor Lusk (*Sci. and Art of Midwif.*, 1892, p. 225). (7) The professor of ? writes that he has never used the binder in question; hence his opinion is of no value from a practical standpoint. The bandage was first put on by me, and made just as tight as the patient could *comfortably* bear. The midwife in this instance was an old woman, and could, under no circumstances, exert one half as much force in adjusting the bandage as myself.

Dr. A. F. A. King was my professor of obstetrics, and taught me the use of the bandage or binder which I have used and shall continue to use, for nothing but the very best results have followed its use in my hands. He says: "It must be wide enough to reach from below the projecting trochanters (otherwise it will slip up) nearly to the ensiform cartilage." I employ a bandage that reaches from the lower border of the breast to about the upper third of the thigh. If this is my fault, I give the following well known authors and professors as my criterions:

It is arranged to extend from the chest somewhat over the hips.—*Parvin, Sci. and Art of Obstet.*, 1895, p. 317.

It should extend from the chest downward below the symphisis pubis and over the hips.—*Amer. Syst. of Obstet.*, 1888, Vol. I, p. 505.

It is a piece of unbleached muslin, 1¼ yards in length, and about 18 inches in width. This gives width enough to reach from the ensiform to a point below the trochanters.—*Amer. Text-Book Obstet*, 1895, p. 384.

It should be about a yard and a half long, so as to well encompass the body, and a foot wide. It should extend from the hips upward to and include the pad, and reaching to the lower border of the mammary glands, and should be drawn as tightly as is consistent with the woman's comfort. See Fig. 83.—*Man. of Obstet.*, Dorland, 1896, p. 188.

It should reach from about the tenth rib to below the trochanters.—*Theory and Prac. Obstet., by Cazeau & Tarnier—Mundé*, 8th Amer. edit., 1889, p. 1076.

It is of sufficient breadth to extend from the trochanters to the ensiform cartilage.—*Playfair's Syst. of Midwif.*, Harris, 1893, p. 307.

Careful observation has failed, however, to show me a single good reason why the binder should be discontinued. My own preference is for a piece of unbleached muslin wide enough to reach below the hips.—*Lusk, Sci. and Art of Midwif.*, 1892, p. 225.

I do not lay claim to the wisdom of Solomon and cannot attribute the cause of this septic case to the injudicious use of the bandage, and methinks that only one who revels in sphere of imagination permeated by a Dante could adduce such an etiological factor.

In the plain and frank narration of facts, I have not borrowed statements and twisted them to make them serve the matter in hand, but in every instance have mentioned my author with a fullness that denies contradiction.

"Beware
Of entrance to a quarrel; but, being in,
Bear't that the opposed may beware of thee."

Having this as my criterion, I challenge the doctor to the world to prove that he has used a "fair statement" in his effort to establish the "obstetrical straight-jacket" as the true cause of the puerperal fever in Mrs. P.'s case.

A. J. Nelson, M. D.

Gaines' Mill, Va., June 4th, 1897.

Proceedings of Societies, etc.

BOARD OF MEDICAL EXAMINERS OF STATE OF NORTH CAROLINA.

The Board of Medical Examiners held its usual Annual Session at Morehead City, N. C., June 7–11, 1897, for the examination of the 82 Applicants for Permits to secure Licenses to Practice Medicine, etc., in the State of North Carolina.

To fill the vacancy caused by the death of Dr. J. M. Hays, of Greensboro, who was the Examiner on Practice of Medicine, Dr. Kemp P. Battle, Jr., of Raleigh, was elected.

Resolutions appropriate to the occasion were adopted relative to the death of Dr. J. M. Hays.

The standard of 80 per cent. was retained as the requirement for successfully passing the Examinations.

Of the 82 applicants, 64 passed successful examinations.

The Chemistry Questions have not been received.

The following were the other

QUESTIONS USED FOR EXAMINATION OF APPLICANTS

during the session—answers to which had to be in writing.

Anatomy.

By ——— ———.

A. Describe 1st, The external surface of the squamous portion of the temporal bone. 2nd, The ramus of the lower jaw. 3rd, The shaft of the femur. 4th, The inferior extremity of the radius.
B. Describe the elbow joint.
C. Describe 1st, The anterior humeral group of muscles. 2nd, The posterior femoral group of muscles.
D. Give the relations of 1st, The anterior tibial artery. 2nd, The brachial artery *at the elbow joint.* 3rd, The right common carotid artery *to muscles.*
E. Describe 1st, The hypoglossal nerve. 2nd. The anterior crural nerve.
F. Give the relations of the stomach.
G. Describe the internal saphenous vein, and its opening in the fascia lata.

Physiology.

By Thomas E. Anderson, M. D., Statesville.

1. Under what two great heads are food stuffs classed? Name article of food belonging to each class.
2. Name ferments respectively of saliva, gastric juice and pancreatic fluid.
3. What part does each perform in digestion?
4. What forces keep up circulation?
5. Explain how and why it is that incompetency of the aortic valves affect the nourishment of the heart.
6. What is the office of red blood corpuscles, their size, and relative proportion to white?
7. What is the nervous mechanism of respiration?
8. What is the object of respiration and how is breathing maintained?
9. Through what nerve or nerves is the sense of taste carried to the brain?
10. What are the component parts of a complete nerve?
11. Name centres lodged in the medulla.
12. What pathological condition is induced by a lesion in the floor of the fourth ventricle.

Materia Medica and Therapeutics.

By David T. Tayloe, M. D., Washington.

1. Give the symptoms and treatment of poison by gelsemium.
2. Give the symptoms and treatment of acute ergotism.
3. Give the physiological action of camphor.
4. What are the constituents of a Seidlitz powder?
5. Give physiological action of alcohol.
6. What is glonoin, and give its therapy.
7. Give physiological action of phosphorus and best antidote for poison by it.
8. Of what is salol composed, and give its uses?
9. Give the physiological action of creosote and dose.
10. How would you treat a patient who had taken an overdose of water of ammonia?
11. Give the physiological action and therapy of ox-gall.
12. What are the constituents of Dover's powder?

Obstetrics, Gynecology, and Pediatrics.

By H. B. Weaver, M. D., Asheville, N. C.

Obstetrics.

1. Describe the mechanism of labor in posterior rotation of the occiput, the vertex presenting.
2. What is placenta previa?
   (a) How soon does it cause trouble?
   (b) What are the dangers?
   (c) What treatment is demanded *before* and at full term?

3. Give symptoms, cause and treatment of eclampsia.
4. How is the placenta formed?
   (1) What are its functions?
   (2) Does the maternal blood enter the circulation of the child?

Gynecology.

5. Name the displacements of the uterus, and give the points of diagnosis between retroflection and retro-uterine fibroid.
6. Describe an efficient secondary operation for the complete rupture of the perineum.
7. Give symptoms, differential diagnosis and treatment of pelvic hematocele.
8. How would you diagnose between cancer of the uterus and sloughing fibroid polypus?

Pediatrics.

9. Give symptoms, with points of diagnosis between *acute dyspeptic diarrhœa* and *cholera infantum*, and treatment for each.
10. What is the difference, in etiology and pathology, between diphtheria and membranous croup? Give a detail of the latest and best treatment.
11. Differentiate between scarlet fever and the other exanthematous diseases.
12. Describe symptoms and treatment of chorea.

PRACTICE OF MEDICINE.

By Kemp P. Battle, Jr., M. D., Raleigh.

1. Give the methods of physical examination of the chest.
2. Give differential diagnosis between capillary bronchitis, emphysema and pulmonary tuberculosis.
3. The heart.
   (a) Diagnosis of mitral regurgitation.
   (b) Aortic obstruction.
   (c) Hypertrophy.
   (d) Dilatation.
4. Give pathology of pachymeningitis, spinal sclerosis posterior, and acute myelitis.
5. Define
   (a) Neuritis.
   (b) Neuralgia.
   (c) Chorea.
   (d) Epilepsy.
6. Give synonyms, definition, etiology, symptoms, diagnosis, prognosis, and treatment of simple anæmia.
7. Describe the hygienic management of a case of typhoid fever.
8. What is the relation of drinking water to the production of malarial fever?
9. Define
   (a) Acute gastritis.
   (b) Enteritis.
   (c) Diarrhœa.
   (d) Dysentery.
10. What is the etiology of gout? Differential diagnosis of rheumatism and gout and treatment of each.

SURGERY.

By Julian M. Baker, M. D., Tarboro.

1. Define (1), Phlegmon; (2), Septicæmia; (3), Tetanus; (4), Sapræmia; (5), Spondylitis; (6), Bacillus.
2. Give the symptoms of (1), Pyæmia; (2), Erysipelas; (3), Cerebral abscess of third left frontal convolution; (4), Appendicitis; (5), Carcinoma of breast.
3. Give the diagnosis of (1), Syphilis; (2), Cerebral concussion; (3), Concealed hæmorrhage; (4), Synovitis of knee-joint; (5), Coxalgia.
4. What is the etiology of (1), Inflammation; (2), Sapræmia; (3), Gangrene; (4), Myxœdema; (5), Actinomycosis; (6), Erysipelas.
5. What is the treatment of (1), Chronic abscess; (2), Fracture of femur (upper third); (3), Internal hemorrhoids; (4), Glaucoma; (5), Talipes equino-varus; (6), Shock; (7), Stricture of rectum.
6. (1), Describe the operation for fistula in ano; (2), The method of reduction of subglenoid dislocation of humerus.
7. Give temperature chart, first week, of (1), Hectic fever; (2), Septicæmia; (3), Malaria.
8. Describe the operation for strangulated inguinal hernia.

We regret that we have not been furished with the post-office addresses, nor the dates nor the colleges of graduation of the following

ALPHABETICALLY ARRANGED LIST OF APPLICANTS WHO PASSED SUCCESSFUL EXAMINATIONS BEFORE THE MEDICAL EXAMINING BOARD OF STATE OF NORTH CAROLINA, IN SESSION AT MOREHEAD CITY, N. C., JUNE 7–11, 1897.

William W. Barrett,	J. E. David,
Henry T. Batts,	J. C. Davis,
A. E. Bell,	W. W. Dawson,
A. C. Bethune,	Avery C. Everett,
B. T. Bitting,	R. E. L. Flippen,
H. M. Bonner,	G. A. Gerran,
James E. Brooks,	L. N. Glenn,
G. A. Brown,	A. B. Goodman,
R. Clinton Bunting,	Samuel N. Harrell,
Reuben A. Campbell,	John Ellis Hart,

L. O. Hays,
James H. Hiden,
William Isaac Hill,
S. P. Holding,
J. J. Hood,
B. R. Hunter,
C. C. Hutton,
Peter John,
Clarence Porter Jones,
R. Du Val Jones,
James M. Judd,
M. L. Justice,
George Kennedy,
Henry F. Kinsman,
F. D. Koonce, Jr.,
L. V. Lee,
W. H. Lippett,
Stonewall J. Love,
J. O. Matthews,
James S. McGeachy,
R. H. McGinnis,
David S. Morrell,
Thomas L. Northrop,
O. J. Parris,
R. Delmere Patterson,
Charles L. Pearson,
J. B. Person,
Sterling B. Pierce,
M. V. Powell,
Charles Roberson,
R. L. Savage,
James Sawyer,
James E. Smithwick,
William Spicer,
R. Pinkiney Turner,
J. Brown Wallace,
W. J. Wallis,
W. J. Weaver,
W. P. Webb,
C. R. Wharton,
A. D. H. Whitty,
Geo. D. Williams,
Allen H. Wyche,
R. E. Zachary.

Book Notices.

System of Practical Therapeutics. *By Eminent Authors. Edited by* HOBART AMORY HARE, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. *Volume IV. With Illustrations.* Lea Brothers & Co., Publishers, Philadelphia and New York. 1897. Large 8vo. 1,065 pages. Regular price: Cloth, $6; Leather, $7; Half Russia, $8. Price of Volume IV to subscribers to the *System:* Cloth, $5; Leather, $6; Half Russia, $7. Price of the *System* complete in four volumes of about 4,500 pages, with about 550 Engravings: Cloth, $20; Leather, $24; Half Russia, $28.

The volume now presented seems to be an indispensable one for those practitioners who seek to keep informed regarding the progress of therapeutics within the past few years. Without marring what was established as true at the time the first three volumes of the *System* as issued in 1891 and 1892, this Volume IV comes to fill the gaps in those volumes, or to represent the advances which have been made since their publication. It was thus found essential to insert practically full chapters of 36 pages to represent "the present treatment of tuberculosis;" of 26 pages to lay before readers "the present treatment of syphilis;" of 43 pages to bring up the treatment of typhoid fever and malarial diseases" to the standard of perfection recently developed; and thus we might go on, page after page, throughout the volume to indicate the important advances which have been actually made in the short space of five or six years. Special articles—all up to date—are given on the therapeutics of influenza, scarlatina, measles, asthma, bronchitis, pertussis, diabetes, new facts and methods in the treatment of diphtheria, diseases of the skin, of renal and genito-urinary diseases, of diseases of the eye and ear which can be treated by the general practitioner, etc. In short, it seems that every advance in the treatment of diseases that come under the care of the general practitioner of medicine has been noted. Thus the book is invaluable to the doctor of medicine. While none of the authors have been selected from that vast territory south of the Potomac or Louisville, where there are any number of gifted and well informed practitioners, still we must say that the corps of editors or collaborators has been selected with good judgement, and they have done their part admirably well. We wish also to commend the course adopted by the publishers in putting this one Volume IV on sale separately—without compelling the doctor who does not wish the first three volumes, to buy them. The prices and terms, etc., we have placed in the superscription of this book notice.

Diseases of the Eye and Opthalmoscopy. By Dr. A. EUGEN FICK, University of Zürich. *Authorized Translation,* by Albert B. Hale, A. B., M. D., Consulting Ophthalmic Surgeon to Charity Hospital, Chicago, etc. *With a Glossary and 158 Illustrations, many of which are printed in Colors.* Philadelphia: P. Blakiston, Son & Co. 1896. 8vo. Pp. 488. Cloth. $4.50.

As "a hand-book for physicians and students," this work possesses many advantages over those that are usually found in doctors' offices. In fact, the prime object of the author was to present a volume that may be used as a text-book—as briefly as possible noting pathological discussions, and only supplementing the clinical study of diseases and operation and the uses of the ophthalmoscope. Space is saved by omitting authorities. A goodly number of colored illustrations have been introduced. The translator's part has been well done. The arrangement is entirely systematic—beginning with well drawn descriptions of the methods of examination, and then taking the diseases of the eye in their natural order of study—first, diseases of the lid, then of the lachrymal apparatus, then of the conjunctiva, then of the cornea, sclera, iris, ciliary body, choroid, retina, optic nerve, etc. Cataract takes up 22 pages; errors of refraction oc-

cupy about 20 pages; amblyopia and amaurosis, glaucoma, strabismus, parasites in the eye, injuries to the orbit and eye-ball, etc., all receive faithful description. In the appendix, we find a list of abbreviations used in ophthalmology; a table for converting metric weights into troy weights, and etymologies—this appendix, however, being copied or compiled from Gould's Medical Dictionary. As a text-book for colleges, etc., we are confident that it will soon become popular, for it possesses special merits for this purpose, and will also long serve the practitioner of ophthalmology all the important values of a trusty guide-book.

The Liver of Dyspeptics, and Particularly the Cirrhosis Produced by Auto-Intoxication of Gastro-Intestinal Origin. By Dr. EMILE BOIX, Interne Laureat des Hopitaux de Paris, etc. *Authorized Translation from the Latest French Edition*, by Paul Richard Brown, M. D., Major and Surgeon U. S. Army. G. P. Putnam's Sons, New York and London. 1897. Cloth. 8vo. Pp. 133. Price, $2. (For sale by George M. West, Bookseller, Richmond.)

Our appreciation of the merits of this work is shown in the adoption of the *conclusions* of the author as a "*Selection*" for the pages this journal. In fact, by turning to them in the proper department of this issue, our readers can glean a better idea of the book than we can give in the limited space at our command. The work is intended as a "clinical, anatomo-pathological, pathogenic and experimental study" of the subject indicated by the title of this book notice. The key to the whole study is the statement of Bouchard (1887): "In the normal, as well as in the pathological condition, the organism is a receptacle, and a laboratory of poisons." While the book is fully worth much more than the price of its purchase, as given above, it has the great misfortune of not possessing a thorough *index*. In this day of great multiplicity of books, when reading has often to be hurriedly done, every scientific book should be carefully indexed.

Much valuable information is annually lost because not properly indexed.

Editorial.

Mr. Wm. B. Saunders,

Medical Publisher, 925 Walnut street, Philadelphia, Pa., announces the following books as in preparation for early publication:

American Text-Book of Genito Urinary and Skin Diseases.—Edited by L. Bolton Bangs, M. D., late Professor of Genito-Urinary and Venereal Diseases, New York Post-Graduate Medical School and Hospital, and William A. Hardaway, M. D., Professor of Diseases of the Skin, Missouri Medical College.

American Text-Book of Diseases of the Eye, Ear, Nose and Throat.—Edited by G. E. de Schweinitz, M. D, Professor of Ophthalmology, Jefferson Medical College, and B. Alexander Randall, M. D, Professor of Diseases of the Ear, University of Pennsylvania, etc.

Macdonald's Surgical Diagnosis and Treatment. By J. W. Macdonald, M. D., Professor of Practice of Surgery and of Clinical Surgery, Minneapolis College of Physicians and Surgeons.

Anders' Theory and Practice of Medicine.—A text-book, by James M. Anders, M. D., Ph. D., LL.D., Professor of Theory and Practice of Medicine and of Clinical Medicine, Medico-Chirurgical College, Philadelphia.

Senn's Genito-Urinary Tuberculosis of the Genito-Urinary Apparatus, Male and Female.—By Nicholas Senn, M. D., Ph. D., LL.D., Professor of the Practice of Surgery and of Clinical Surgery, Rush Medical College, Chicago.

Penrose's Gynecology. A Text-Book. By Charles B. Penrose, M. D., Professor of Gynecology, University of Pennsylvania. Price, $3.50. Ready in August.

Hirst's Obstetrics—A Text-Book. By Barton Cooke Hirst, M. D., Professor of Obstetrics, University of Pennsylvania.

Moore's Orthopedic Surgery. By James E. Moore, M. D., Professor of Orthopedics and Adjunct Professor of Clinical Surgery, University of Minnesota, College of Medicine and Surgery.

Heisler's Embryology—A Text-Book of Embryology. By John C. Heisler, M. D., Prosector to Professor of Anatomy, Medical Department of University of Pennsylvania.

Mallory and Wright's Pathological Technique. By Frank B. Mallory, A. M., M. D., Assistant Professor of Pathology, Harvard Medical School; Assistant Pathologist to the Boston City Hospital; and James H. Wright, A. M., M. D., Instructor in Pathology, Harvard Medical School; Pathologist to the Massachusetts General Hospital.

Sutton and Giles' Diseases of Women—A New Volume in Saunders' Aid Series. By J. Bland Sutton, F. R. C. S., Assist. Surgeon to Middlesex and to Chelsea Hospital, London; and Arthur E. Giles, M. D., B. Sc., Lond., F. R. C. S., Edin., Assistant Surgeon, Chelsea Hospital, London.

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Original Communications.

THE SPECIFIC USE OF DIPHTHERIA-ANTITOXIN IN LARYNGEAL DIPHTHERIA.*

By EDWIN ROSENTHAL, M. D., Philadelphia, Pa.

Clinical experience has taught me to recognize *two forms of laryngeal diphtheria*, early recognition of which very materially alters the prognosis of the disease. To these forms I give the name of *primary* and *secondary laryngeal diphtheria*. The *former* embraces the class of cases formerly designated "membranous croup," and with the exception of probably 10 per cent. of the cases are now known to have their origin in a Klebs Loeffler infection. *The secondary variety* is the most serious, and its recognition as true diphtheria is clinically proven by the fact that the tonsillar or nasal variety has become laryngeal. The diagnosis is assured because the membrane is always visible, and its development can be observed from stage to stage.

Before the introduction of the antitoxin treatment primary laryngeal diphtheria, or so-called membranous croup, was the more dangerous, for the reason that death was often the sequel before a pseudo-membrane could be recognized. Under antitoxin treatment the secondary variety is the more dangerous, because the opportunity for specific treatment too frequently comes late, when the disease has reached the fifth or sixth day, and the system become loaded with overwhelming toxic and septic material.

My belief in the identity of membranous croup and laryngeal diphtheria was frequently verified in cases which I intubated before the introduction of serum treatment. When, otherwise, the patient would have died from suffocation, life was prolonged sufficiently to permit membranes to form upon sites visible to the eye. At present prompt recognition of the diphtheritic character of such cases can be had by laboratory tests, and the disease aborted in its inception by the timely administration of antitoxin.

This early recognition has already resulted in the greatest number of recoveries ever recorded from laryngeal diphtheria, and the greatest diminution in the number of such cases requiring operative interference. My personal experience is that of many others, as shown by the supplementary collective investigations of the American Pedatric Society on the antitoxin treatment of laryngeal diphtheria in private practice.

"In 1,000 non-operative cases the mortality was 17 per cent.; in 668 operative cases the mortality was 27 per cent. Before antitoxin was used the percentage of recoveries was 27; with antitoxin treatment the recovery was 73 per cent. In connection with this it was found that before the use of antitoxin 90 per cent. of laryngeal cases required operation, while now but 39 per cent. require it."

In this connection it is to be noted that the report also conspicuously shows the influence which antitoxin has exerted in causing a change in our methods of presenting results of treatment. "In the early days of intubation it was customary to speak of the percentage of recovery, and from 25 to 27 per cent. were considered good results. In the last report the recoveries had crawled up so high that it seemed more natural to speak of the percentage of mortality."

Early recognition not only alters the prognosis of a particular case, but also demonstrates the best method of using the remedy. Briefly to summarize:

In primary laryngeal diphtheria treated early, one curative injection of antitoxin will promptly abort the disease and effect a speedy cure; and collateral medication will not be necessary. The dosage is to be determined by the gravity of the case and taking the age of two years as the dividing line, and above this give

* Abstract of a paper read in the section on Diseases of Children of American Medical Association at Philadelphia, Pa., June 1, 1897.

2,000 units for the commencing dose, and below this 1,000 units. Very frequently the initial injection is found sufficient, and never in my experience has more than a second injection of the same dose been required.

In secondary laryngeal diphtheria, antitoxin is but the prelude to further medication. He that trusts alone to the remedy meets with unsatisfactory results. Intubation is frequently required. Supplementary medication is a necessity. Stimulants may be so urgently required that hypodermic medication must be resorted to.

Failures that I have seen were frequently due to neglect in the line of these precautions. Jacobi tersely remarks: "The best treatment is preventive. Many a case might be saved by a few grains of digitalis or other cardiac tonic, or a few grains of camphor or musk, if administered in time. A perfunctory expectative treatment, extending from the first call to the writing of the death certificate, can be performed by anybody. What is expected of a physician is that he know beforehand whether or not in an individual case the heart will carry its owner through an inflammatory or infective process without requiring stimulants."

It would be superfluous in me to add a word to this; its application is self-evident. Regarding the methods of using antitoxin in such serious cases, it may be added, one injection is insufficient, so may be two; but when used it should be administered freely and persistently. The rule should be to begin with 2,000 units, and to repeat this dose, or double it at intervals of eight to ten hours, until favorable action of the antitoxin is noted.

Remembering that antitoxin is used simply to antagonize the diphtheritic process, use it fearlessly and judiciously. Failures will then be the exception. To illustrate the method pursued, I will describe two cases of this series, both ending in recovery.

Case xxxii. (32), patient of Dr. J. H. Moore, Bridgeton, N. J.; Alfred L., age five years. First seen on the sixth day of his illness and immediately intubated. The child had been treated during the preceding six days by the older methods with apparent success, the membrane then visible upon the fauces disappearing. On the sixth day, however, laryngeal invasion necessitated intubation. At this time antitoxin treatment was begun and employed as follows:

Day of Disease.	Date.	Time and Quantity.
6th.....	Jan. 3—1st injection.....	11 A. M., 1,500 units.
	2d injection.....	8 P. M., 2,500 units.
	Intubation at this time after extubation by expectoration of tube on,	
10th.....	Jan. 7—3d injection.....	11 A. M., 2,000 units.
	4th injection.....	8 P. M., 1,000 units.
14th.....	Jan. 11—5th injection....	8 hours 1,000 units.
	6th injection.....	Apart, 1,000 units.
19th.....	Jan. 16—7th injection.....	5 hours 1.000 units.
	8th injection.....	Apart, 1,000 units.
20th to 25th.....	Jan. 17—9th injection (2 injections daily for 5 days, until 16th injection).....	Morning and Evening, 500 each.
		Total, 16,500 units.

Mulford's Concentrated Antitoxin.

These injections were given when the membrane returned after a distinct re-infection, the seat of which, probably, was a chronic ulcer. From time to time the presence of the Klebs-Loeffler bacilli was shown by bacteriologic examination. The 500-unit injections were given as a precaution until convalescence was fully established. The supplementary medication consisted in hypodermic injections of strychnine, etc. This was a typical case of *chronic diphtheria*, an ulcer being formed upon the affected membrane.

The second case of this series was seen in the practice of Dr. S. W. Gadd:

Case xxxvi. A. S., aged two years. First seen and intubated on the fifth day of the disease. At the same time I injected 2,000 units of antitoxin and directed that $\frac{1}{100}$th grain of strychnine be administered hypodermically every six hours. The quantity of antitoxin in this case was 6,000 units, and the tube was worn nine days. Recovery was perfect.

When insufficient antitoxin is administered the condition improves, so long as the effects of the dose last; but after this relapses take place. Instances of this I have seen only recently, in a case of Dr. Segal and two cases in the practice of Dr. D. A. Kappes. Prompt and energetic use of antitoxine and intubation resulted in recovery. In the former case this course was not pursued, but the child removed to the Municipal Hospital, where I lost sight of it.

To summarize his experience during the last year with these particular cases Dr. Rosenthal exhibited a chart, the same as is used by the American Pediatric Society, and which briefly gives the age of the patient, the day upon which the initial injection was given, the quantity of antitoxin employed, whether or

not intubated, the time the tube was worn, the results, etc.

A brief *analysis of cases* showed total number treated during the past year 48, with 7 deaths; mortality, $14\frac{5}{10}$ per cent.

Of these, 25 were not intubated; one died; mortality, 4 per cent.; 23 were intubated, of which 6 died; mortality, 26 per cent. The latter mortality rate is similar to that shown by the collective investigations.

When it is understood that most of the above cases were seen in consultation with other physicians, and that I was called when intubation was urgently required, it will be readily understood why the proportion of operative cases is so large.

In respect to age, the following is to be noted:

Under 1 year of age, 3 cases; requiring intubation, 1 case; deaths, 1.
Between 1 and 2 years, 10 cases; requiring intubation, 6 cases; deaths, 2.
Between 2 and 3 years, 14 cases; requiring intubation, 5 cases; deaths, 3.
Between 3 and 4 years, 2 cases; requiring intubation, 2 cases.
Between 4 and 5 years, 7 cases; requiring intubation, 4 cases.
Between 5 and 10 years, 10 cases; requiring intubation, 4 cases; deaths, 1.
14 years, 1 case.
Over 20 years, 1 case; requiring intubation, 1 case.

Of the 23 cases intubated, 17 recovered. The time the tube was worn in these cases is as follows:

1.	1 case	½ hour
2.	1 case	27 hours
3.	1 case	31 hours
4.	1 case	70 hours
5.	1 case	72 hours
6.	1 case	144 hours
7.	1 case	75 hours
8.	1 case	82 hours
9.	1 case	97 hours
10.	1 case	104 hours
11.	1 case	116 hours
12.	1 case	140 hours
13.	1 case	155 hours
14.	1 case	160½ hours
15.	1 case	186 hours
16.	1 case	216 hours
17.	1 case	576 hours
	Total time	2180 hours

Divided by number of cases (17) makes the average time 128¼ hours.

In concluding this paper, I must reiterate what I have so frequently written, that to be successful in the treatment of laryngeal diphtheria with antitoxin, its purpose, its dosage and its limitations must never be lost sight of.

To understand its effects is to know when and how to use it. In laryngeal diphtheria, a fixed law is that the remedy should be used early and repeated in at least 12 hours. As regards dosage, the same rule holds in this variety as in the other, and in repeating, the dose should be double, or at least the same quantity as the initial dose.

Limitations: Antitoxin antagonizes the diphtheria toxins and arrests the primary infecting process. Re-action to the disease must be had within three days. Antitoxin will not prevent suffocation. If the membranes are formed in great quantities, or spasm is marked, death may result from asphyxia before the antitoxin has had time to act. Therefore, it is always a safe rule to follow, if there be any indications for operative interference, to intubate early. Intubation, especially in cases of secondary laryngeal diphtheria seen late, should be performed at the first visit, and if not, the case should be carefully watched, for in the separation of the membranes, suffocation may occur in spite of the best effects of antitoxin.

517 *Pine Street.*

DIGESTIVE FERMENTS.*

By MARK W. PEYSER, M. D., of Richmond, Va.,

Lecturer on Physiology, University College of Medicine; Secretary Richmond Academy of Medicine and Surgery.

For some time, I have been of the opinion that, among other agents, the digestive ferments were, perhaps, used more injudiciously than any remedy in materia medica, my experience being that the faulty work of the alimentary canal was due rather to lack of acid and carbonate of sodium, borne out by the relief obtained through the use of these.

Because of this, the ferments of various manufacture have been often decried by the practitioner, when the fault lay in his own diagnosis.

In the past year, much light has been thrown upon the physiological action of enzymes; so much, in fact, that it would be beyond the limit assigned to this sketch to enter into detail; but it is desired to mention one fact of vast importance in every practice. It has been until recently taught that as soon as food was introduced into the mouth, the flow of gastric juice was excited, the stomach thereby becoming acid in reaction. Because of this, salivary digestion ceased when food was swallowed, ptyalin, acting only in neutral or alkaline media, being destroyed. Also, because of this, it was almost a waste of time and material to administer pancreatic enzymes, which act, too, in alkaline media, and which are obliged to run the acid gauntlet of the stomach.

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* Read before the Richmond Academy of Medicine and Surgery, June 22, 1897.

It is now, however, known that the acid gastric juice is not secreted for some appreciable time after food has passed into the stomach; that ptyalin continues to act after it has been swallowed, further changing the intermediate products of salivary digestion into maltose; and that for this reason we may be reasonably certain of obtaining desired results when the pancreatic enzymes are given by the mouth.

But, as was said before, disappointments are likely to follow because we do not discriminate between lack of acid and lack of pepsin; between lack of carbonate of sodium and lack of trypsin, or amylopsin.

The test tube is by no means a criterion of what occurs in the human economy; but I should like to relate an impressive fact as to the stability of the various digestive ferments on the market; and, before going further, let me state that I do not desire to make any invidious comparisons nor champion a particular manufacturer.

In making preparations for demonstrating the action of the digestive ferments, before the first year class of the University College of Medicine in physiology, I could find but three preparations of the necessary agent at hand. Two of these were not much less than three years old, and one, that of Parke, Davis & Co.'s lactated pepsin, had been unstopped for nearly that length of time; the second preparation of pepsin had never been opened, and retained to the naked eye the characteristics it had when first received. The third specimen was a liquid preparation that had been left at the office but a few days previous, and, therefore, to be supposed, perfectly fresh.

All were subjected to the same test. Three beakers were taken, and in each was placed a piece of coagulated egg-albumen, weighing two drachms. In beaker A was poured a solution of lactated pepsin, in beaker B, a solution of the second preparation, with .2 per cent. solution of hydrochloric acid; in beaker C, the third, the liquid preparation.

A word of explanation is now in order. It is claimed by the manufacturers that lactated pepsin contains all the ingredients necessary for gastric digestion, and, to make things equal, the hydrochloric acid was added to the second preparation so as to complete the artificial gastric juice. For the third preparation the manufacturers claim all the ingredients necessary.

To resume. The beakers and contents were placed in a water bath at about 100° F. and kept there for three hours. In less than an hour, disintegration began in A, no change occurring in B or C. In two hours, the contents of A were small masses of egg-albumen floating in solution; no change in B or C. In three hours, the contents of A were in a flocculent state, and still there was no change in B or C. Further experiments showed that casein would be precipitated almost immediately by the first preparation, and, if allowed to further act, would continue the digestion, while the other two were inert.

At my request, the before-mentioned firm kindly forwarded preparations of Taka-Diastase and pancreatic extract for class demonstrations. A grain or two of the Diastase, introduced into a test tube containing boiled starch, liquefied it almost immediately, and after placing the tube in a water bath at 100° for half an hour, glucose was detected both by Fehling's and the picric acid tests, which showed remarkably rapid action.

For demonstrating the action of the pancreatic extract on albumen, three beakers were taken and labelled. In A was placed a piece of coagulated egg-albumen, weighing two drachms, with a solution of the extract; in B, a like weight with an identical solution, to which was added hydrochloric acid; in C, the same weight of albumen and quantity of solution, to which, however, was added carbonate of sodium. All were placed in the water bath at 100° F. In two hours, the eroding action of the trypsin could be plainly seen in C, but of course none was visible in A or B. The biuret test showed the presence of peptones in C and absence of them in A and B.

Emulsification of oil was tried, and although partially successful, the lack of time and suitable conditions prevented satisfactory results.

And now, in closing this short demonstration, allow me to ask you to make a clear diagnosis before advising the digestive ferment; be sure, too, that you have the form of indigestion firmly fixed; and last of all, distinguish between the albuminous, amylaceous and fatty forms of intestinal indigestion.

Our method of prescribing for indigestion is one of the double-barrelled, handed down by our medical forefathers, who scarcely comprehended what it was. In the broad glare that latter-day investigations have thrown upon the subject, we have no excuse for administering the olla podrida that, with them, was science.

1212 *East Broad Street.*

Specific for Hiccough.

A writer in the *Medical World* says that *capsicum, in hot infusion,* is a specific for hiccough.

STUDIES IN GYNÆCOLOGY FROM THE SERVICE OF THE WOMAN'S HOSPITAL OF PHILADELPHIA.*

By ANNA M. FULLERTON, M. D., Philadelphia, Pa.,

Recently Physician-in-Charge of the Woman's Hospital of Philadelphia, etc.

The wonderful development of operative gynæcology within recent years, and the field offered by the manifold intra-pelvic affections to the ambitious and skilful surgeon, have attracted to this department of medical science a large number of the best workers in the profession. The tendency of modern gynæcology to become so largely a branch of surgery, rather than of general medicine, has excited much comment, and alarm has been expressed at the frequency of resort to capital operations for the relief of pelvic disease—the gynæcological surgeon often reaping much censure for insisting that radical procedures alone can remedy many of the deplorable conditions which modern surgery and pathology have demonstrated to exist. Such criticisms are manifestly unjust when applied to the intelligent, conscientious surgeon, whose knowledge of the morbid state with which he has to deal should in itself be a guarantee of the necessity for the operative procedures to which he may resort.

The tendency of gynæcology to become a branch of surgery rather than that of general medicine results from the fact that diseased conditions affecting the pelvic viscera frequently result in the production of *organic* lesions, which induce chronic invalidism, and render the functional activity of the generative organs a menace to the health and even to the life of the patient.

Hospital experience abundantly illustrates the truth of the conclusion that *medical* gynæcology is limited in its beneficent uses to prevention rather than to cure. Its results are particularly unsatisfactory with the class of women who are obliged to be wage earners, and who cannot keep themselves comparatively comfortable by rest and the constant application of palliative remedies.

The education of the average physician to the appreciation of the early symptoms of pelvic disease, would probably do much to prevent the frequent occurrence of the more serious conditions.

In elaborating the possibilities of surgical gynæcology, it is possible for us to lose sight of the fact that the truest benefactors to womankind will be those gynæcologists who, making a careful study of the laws affecting the functional life of woman under the changed conditions of civilization, shall formulate principles for the conduct of her life which shall enable her to be shielded from the present dangers which beset her path.

Too often does the gynæcological surgeon realize that in the removal of diseased pelvic organs, he is but culling away, as it were, dead twigs and branches from a plant which has a worm at the root. Practically, the performance of operations for the extirpation of the pelvic viscera unfits a patient for the continuance of the marital life; and, since about two-thirds of all patients operated upon for pelvic disease are women who are or have been married, the decision as to the absolute necessity for a radical operation in each case becomes one requiring a very careful judgment.

So largely is the health of a woman affected by her emotions, that any cause for unhappiness, induced by the operative measures to which she has been subjected, may serve to make her last state worse than the first. For these reasons, the author of the paper urges that we look more fully in the future to the development of the *constructive* processes of our art—the making of healthy women of our growing girls.

How rarely do the so-called palliative measures for the relief of pelvic disease find any tolerance in special hospitals for the treatment of diseases of women! Yet there is a time in the progress of most pelvic maladies when the patient cannot be said to have passed the pale of hope; although, if her affection be permitted to develop, she may soon be classed among incurables.

In making a concise summary of the gynæcological work done in the Woman's Hospital of Philadelphia during her association with the institution as its physician-in-charge (1886–1896), the author found that, among nearly 40,000 cases treated in the wards and dispensary of the hospital, 41 per cent. were inflammatory diseases of the pelvic organs; 27+ per cent. were displacements; 14+ per cent. were functional disturbances, mainly due to constitutional causes, lack of development, etc.; 7+ per cent. were neoplasms; 10+ per cent. were lacerations resulting from childbirth. Inflammatory diseases were found to be mainly septic in origin, puerperal or gonorrhœal; displacements were often the result of faulty hygiene. For both these conditions palliative measures, although often temporarily beneficial, had been

* Abstract of a paper read at the meeting of the American Medical Association, held in Philadelphia, June 1–4, 1897, in the Section on Obstetrics.

found to be unsatisfactory, so far as permanent results were concerned.

In making an analysis of 236 cases requiring major operations in the service of the author of this paper (including 42 cases of hysterectomies, 21 ovariotomies, 12 ectopic gestations, and 123 cases of salpingo-oöphorectomy for chronic diseases of the appendages and pyosalpinx), the pathological conditions which led up to these grave results appeared to originate as follows: In 50 per cent., puerperal complications were found to exist; in 15 per cent., there was a hereditary tuberculous taint; in 12 per cent., specific disease; in 14 per cent., simple inflammatory trouble, the result of exposure or trauma, leading, in patients constitutionally weak, to grave complications; in 5 per cent., arrested development of the pelvic organs; in 5 per cent., persistent uterine displacements, resulting in inflammatory complications; in 5 per cent., anæmia, inducing functional irregularities, and later, organic disease; in 4 per cent, malignancy.

The condition of nervo-muscular atony, so common among the young women of civilized life, is largely responsible for the frequent and persistent uterine displacements found among young girls.

The treatment most effectual in combating such tendency is that which is directed to the strengthening of the uterine supports, the muscular elements which normally exist in the ligaments which suspend the uterus.

The experiments of Dr. Kellogg, of Battle Creek, have admirably shown the importance of the round ligaments in maintaining the uterus in place. He has also shown how all factors that interfere with the practice of the abdominal type of respiration tend to weaken the muscular contractility of these ligaments, until finally there is a complete atrophy of their muscular elements, and the uterus is allowed to drop low in the pelvis, carrying with it the ovaries and tubes. Hence, the importance of beginning all treatment with the proper adjustment of a patient's clothing, by insisting upon the adoption of some such system of dress reform as the Jenness Miller, or a modification of the same by which the clothing shall be light, loose, and supported entirely from the shoulders.

In the case of young girls, should decided malposition of the uterus exist, the author of this paper advocates the temporary support of the organ by a soft rubber pessary, during the employment of exercise calculated to restore the muscular tone of the ligaments. The use of the bicycle seems especially well adapted to this purpose, provided the patient has a properly selected saddle and is insured against falls.

Unhealthy conditions of the pelvic organs, existing previous to marriage, illy fit a woman for childbearing; and observations of cases in the Maternity connected with the Woman's Hospital confirm the results of other investigators in showing, among the perverted phenomena associated with the childbirth, the following:

During pregnancy: 1st. A tendency to the early loss of the product of conception, due to diseased conditions of the endometrium.

2d. The prolongation of the period of gestation when carried to full term, owing to the atonic condition of the uterine tissues and to the relaxation of the abdominal walls which, for this reason, submit more readily to overdistension.

During labor: 1st. Prolonged labor, the result of exhaustion of the physical forces.

2d. Dystocia, the result of the mechanical hinderances to the progress of labor produced by undue size and ossification of the fœtal head—a condition attributable to the physical inactivity of civilized women, particularly among the higher classes.

During the lying-in: 1st. The lengthening of the time required for the process of involution and frequent subinvolution, also the result of atony.

2d. The imperfect performance of the function of lactation.

3d. The effect of what we may term *subinvolution* of the abdominal walls, leaving them in a flaccid state, after the distension to which they have been subjected during pregnancy; and the change in abdominal pressure thus induced must be regarded as of great importance in considering the causes for descent of the pelvic organs.

Observations in connection with the Maternity work of the Hospital show about 14 per cent. of the patients to have had contracted pelves. Including among abnormal pelves those of faulty inclination, the number reaches fully 20 per cent. This was in part probably due to the large number of foreigners delivered in the obstetric wards. Generally, contracted pelves were found to almost double the number of simple flat pelves. The average contraction was not of a high grade. The induction of premature labor was most satisfactory in its results, for both mother and child, in the management of such cases. Fœtal mortality from all causes in the Maternity was $4\frac{3}{10}$ per cent. About 19 per cent. of all the cases delivered required operative interference at full term.

In closing, the author spoke of the impor-

tance of early recognition of abnormal tendencies, and the necessity for their control by wise supervision.

123 *South 16th Street.*

BELLADONNA TREATMENT OF PERTUSSIS.*

By HARRIET E. GARRISON, M. D., Dixon, Ill.

In speaking of the treatment of pertussis, the *American Text-Book of the Diseases of Children* says: "An attempt to consider the drugs which have been employed in the treatment of pertussis would be so much a waste of time and space that only the most important of them can be mentioned here. Belladonna is one of those best and longest known and most widely used."

After this exposition, it seems a work of supererogation for this learned body to listen to a paper on this subject; but I understand that the object of our annual meeting is to consider the best, if not always the newest, mode of treating diseases, and therefore desire to present a few clinical notes of some of my experiences during the last six months with the belladonna treatment of pertussis.

December 30, 1896.—I first saw Baby P. after he had contracted pertussis. He was a poorly nourished child, eight months old, with a suspicion of a paternal specific inheritance. From December 2d to 10th, he had been under my care for la grippe with bronchial complications When he again began coughing with pertussis, it was supposed to be a return of the influenza, and he was given some of the cough mixture which had before relieved the bronchitis, but as the cough became more annoying, I was asked to see him.

While making the examination at 5 P. M., he was seized with a paroxysm of coughing and gave the pathognomonic whoop; the cough was said to return every half hour, but he had never before had such a marked whoop. The medicines now given were one-fourth drop doses of tincture of belladonna, to be repeated every hour, unless marked dilatation of the pupils was produced. He was also given:

℞.—Syrup ipecac..... .... gtt. ij
Syrup prunus virginica..... gtt. x
Emulsion cod-liver oil with
syrup hypophosphites..... ʒss
M. S.: To be repeated every four hours.

I saw the child again on the morning of the third day. He was bright and playful, and while romping with his mother was taken with coughing, but the intensity and duration of the paroxysms were much modified. The attendants said that the night after my first visit he was very restless, coughing every half hour and requiring constant attention, and the belladonna had been given regularly—one-fourth drop every hour, without manifesting any of the usual physiological actions. By morning the paroxysms were less frequent, and in twenty-four hours the child was able to sleep two hours without coughing. From this time on there was a gradual improvement, but he was still given belladonna, one-fourth drop every hour when awake, as whenever it was discontinued for twenty-four hours the paroxysm became more frequent and severe.

January 23, 1897.—I saw the child for some abdominal disturbance in no way dependent upon the pertussis, and found him entirely free from cough, and the mother said he had been for a week, thus making the duration of the pertussis three weeks—fourteen days from the beginning of the belladonna treatment. Since then I have frequently seen the child while attending other members of the family, and he is in better health than before the attack of pertussis.

January 22*d.*—When called to attend Mrs. P., my attention was called to her daughters, Maud, aged 10, and Katie, aged 8, who had been having pertussis for ten days. The paroxysms were very severe, and always accompanied by vomiting. The mother was under the impression that whooping cough must run its course, and they had been given palliative medicines prescribed by friends. I put twenty drops of belladonna in forty drops of water and directed a teaspoonful to be given every hour, also a three-grain Dover's powder at bedtime. When I made my regular visit to the mother three days later, she said that "the medicine had benefited the girls very little, although they had slept some better at night, and now they were taking hive syrup." I then left granules of atropine sulph. gr. $\frac{1}{250}$, one to be taken at bedtime. On Katie these produced the toxic action, manifested by severe choking, and the pertussis was immediately relieved. She continued to take the atropine nightly for several days, and in a week's time the whoop had disappeared from the cough, but Maud was no better. During my third visit, Maud had a paroxysm and began to scream, kick and look to each one present for sympathy. From these symptoms, I reached the conclu-

* Read before Section on Pediatrics, Semi-Centennial Session of American Medical Association, in Philadelphia, June 1–4, 1897.

sion that there was a hysterical element in this case, and gave bromide of sodium in five-grain doses every four hours, in addition to the atropine, which was given twice daily. As there was not as much benefit derived from the bromide, as I expected, at my next visit I gave assafœtida gr. iv every four hours instead, and found it just the adjuvant needed in this case. Three weeks after beginning the atropine, Maud was cured of the pertussis, but she had vomited so much of the nourishment taken that she was anæmic, which culminated later, April 5th, in an attack of supra-orbital neuralgia.

In these cases the surroundings and food were very prejudicial—shut in by cold weather with an invalid mother in three hot rooms, without ventilation; the morning meal at 10 A. M. was hot griddle cakes floating in butter and syrup. I earnestly strove, without avail, to change the diet; but at the first approach of milder weather, I sent them to play out doors. I had had experience with Maud's predisposition to become anæmic when I had attended her with post-cervical glandular enlargement after an attack of influenza complicated by tonsillitis, eighteen months before the attack of pertussis. As "tasteless cod-liver oil" had benefited her, I again prescribed it; but as it is an expensive preparation, the father did not get it until after the attack of neuralgia, after which she soon regained her usual health.

February 22*d*, I first saw Helen A., aged 11 months. She had been under the care of another physician for three weeks with pertussis, and as she seemed much worse, and they could not procure his services, I was called. She had several "kinks" during each paroxysm of coughing, and it was followed by vomiting. The mother said the child had not had an hour's continuous sleep for ten days. On examining the child, I found capillary bronchitis of the right lung and heart weakness; temperature 102°, pulse 144; there was also retention of urine, it being voided only in the evening, but at that time the mother said there was a free discharge. For the pertussis, I gave belladonna gtt. one third every hour; for the bronchitis, powders of pulv. ipecac. co., gr. one-fourth, hydrarg. chlor. mitis gr. one-tenth every two or four hours, to depend upon the amount of restlessness; for the heart weakness, tr. strophanthus gtt. one-fifth every four hours, and for the urinary retention, infusion of buchu leaves *ad libitum*. When I saw the child in the evening of the same day she was much better; temperature 100, pulse 120; bronchitis somewhat relieved. The following morning she was bright and playful; temperature normal, pulse 100, and she had slept several consecutive hours during the night, and the paroxysms were much lessened in severity. In place of the powders, I now prescribed:

℞.—Tr. opii camp.....ʒij
Syr. ipecac.....ʒj
Syr. prunii virg.....ʒss
Malto-yerbine.....q. s. ʒij
M. Sig.: One half teaspoonful every four hours.

As she continued to improve, I did not see her again for five days, but when the belladonna which I dispensed was all used, the father would call at the office for another supply, as the paroxysms became more frequent and severe if she was without the belladonna for any length of time. It was five days before the urine was voided naturally; at the expiration of eight days I gave the following prescription:

℞.—Tr. belladonna.....gtt. x
Tr. opii camp.....ʒj
Syr. ipecac.....ʒjss
Syr. scillæ.....ʒjss
Sys. tolu.....ʒj
Syr. prunii virg.....q. s., ʒij
Sig.: One-half teaspoonful every four hours.

I saw her twice while taking this mixture—the last time sixteen days after beginning the belladonna. This call was for some bowel derangement accompanied by twitching and restlessness in no way dependent upon the pertussis, but when I reached the house the child was sleeping soundly. The mother had given a dose of castor oil before the messenger had been sent for me, and as soon as it operated the nervousness ceased. While I was making an examination the child awoke and cried, after which, she had a mild attack of coughing, but without kinks.

From these observations where the patients have been seen at the height of the disease, and after all symptoms of pertussis have disappeared, my conclusions are: That belladonna *per se* will relieve pertussis. If there is still a severe cough after giving belladonna freely, look for another neurotic element; children bear belladonna well, and it takes a proportionately larger dose to produce toxic symptoms than in adults; the younger the child, the better the belladonna in relieves the kinks of pertussis; there is no danger to the heart in giving belladonna in pertussis.

THE CLINICAL IMPORTANCE OF EYE-SYMPTOMS

In Arriving at a Diagnosis of Meningitis in Children.*

By A. E. DAVIS, M. D., New York.

The author regretted the fact that the eyes did not generally receive early and close attention in cases of meningitis. While no doubt the eyes and their symptoms, in relation to all diseases, now receive much more careful attention than formerly, yet it only too often happens that the general practitioner does not turn to the oculist for advice until he has exhausted all other means.

He also emphasized the importance of an ophthalmoscopic examination in all cases of meningitis, and especially in cases where diagnosis was in doubt—an optic neuritis being a positive indication of brain complication; and to those who are unable to use the ophthalmoscope he urged the importance of making note of the *motor eye symptoms* present; for many of the eye symptoms in meningitis are motor in character, that is, paralysis of the different eye muscles, pupillary changes, ptosis, conjugate deviation, etc., which may be observed without the aid of the ophthalmoscope.

A brief report of 38 cases of meningitis, treated in the wards of the Post-Graduate Hospital of New York, was given. Of these, 13 were of simple lepto-meningitis, 12 cerebro-spinal, and 13 tubercular. The eye symptoms observed in these cases were paralyses of the different muscles, pupillary changes, nystagmus, and optic neuritis.

In commenting on these cases, the author said:

"In order to make the eye symptoms of value in diagnosis in the different forms of meningitis, we should, where it is possible, decide if the symptoms are primary or secondary in character—that is, if a symptom—*e. g.*, paralysis of the sixth nerve, is due to a direct lesion in the nucleus or course of the nerve itself, when it would be primary in nature; or is due to a lesion far removed, which affects the nerve indirectly through pressure, disturbance in circulation, etc., when it would be secondary in nature. Primary symptoms are of much more importance than secondary ones. Unfortunately, sometimes it takes days, or even weeks, to decide between the two. It must be borne in mind also that *diffuse* symptoms, as general headaches, etc., are of not great importance as compared to focal symptoms."

The author of the paper then considered separately *the three forms of meningitis commonly met with in children*—to-wit: *cerebro-spinal, simple*, and *tubercular*.

Cerebro-Spinal Meningitis.

The eye symptoms, one or more of which may occur in cerebro-spinal meningitis, are as follows:

Motor symptoms—paralysis of the sixth nerve, of the third nerve—partial or complete—of the fourth nerve, of the ophthalmic division of the fifth nerve, which may give rise to the so called paralytic keratitis, and of the seventh nerve; and conjugate deviations, nystagmus and ptosis from central lesions.

Visual Symptoms.—Optic neuritis, choked disc, perineuritis, neuro-retinitis, plastic and suppurative choroiditis, iritis, conjunctivitis, œdema of the lids, hemianopsia as a cortex or tract lesion, and blindness.

A peculiarity of cerebro-spinal meningitis is that the eye symptoms vary in different epidemics; for instance, one epidemic may be marked by a simple conjunctivitis of a more or less severe character, another by plastic or suppurative choroiditis, another by keratitis, another by optic neuritis, etc.

The general symptoms—fever, vomiting, headache, retracted head, spinal irritation, herpetic or petechial eruption, etc.,—taken together with the fact that cerebro spinal meningitis usually occurs in epidemics and in the winter and spring, as a rule, make the diagnosis easy, even without the aid of eye symptoms. But in sporadic cases, where the general symptoms are not well marked and some of them absent altogether, the eye symptoms may be *the* determining factor in establishing a diagnosis.

SIMPLE LEPTOMENINGITIS

The eye symptoms are of even more importance in arriving at a diagnosis in simple meningitis than in cerebro-spinal. First, because it does not occur in epidemics; second, because it is always secondary, and its true nature may be masked by the primary affection. The eye symptoms in this affection are the same as those in cerebro-spinal meningitis.

Special emphasis was given to those cases *following chronic suppuration of the middle ear and acute febrile diseases.* The author called attention to the fact that *chronic suppuration of the middle ear in children* was, unfortunately, often looked upon as of little consequence, the

* Original abstract of a paper read before the Section on Pediatrics of the American Medical Association during its Semi-Centennial Session in Philadelphia June 1-4, 1897.

child being expected to "outgrow it." Fortunately, extension of the inflammation from the ear to the brain in such cases is not very common, but when it does occur, optic neuritis is almost invariably present, if not as a choked disc, "something between œdema and actual inflammation of the nerve."

The author then quoted from Dr. Mathewson, of Brooklyn, a case of brain abscess and local meningitis following a chronic suppuration of the middle ear and mastoid trouble. The patient, a little girl, had apparently been well of the ear trouble for four months, when she was taken suddenly ill after attending a children's party. And even in the hands of experts this case had been mistaken for one of "gastric and hepatic disorder." The ophthalmoscopic examination showed no swelling of the nerve disc, and the retinal vessels were not tortuous, though there was a peculiar dark color with some dilatation of the retinal veins. Death occurred on the second day, and autopsy revealed the true nature of affairs.

A case of brain abscess, sinus thrombosis and meningitis, in the person of a boy, follow a chronic suppuration of the middle ear of a number of years standing and mastoid trouble, was quoted from a paper by Dr. Pooley, of New York. In this case, choked disc was a prominent symptoms. Pooley, in one of the deductions of his paper, said: "The intra-ocular end of the nerve is never inflamed when the disease remains limited to the middle ear and mastoid, but when present, is a certain evidence of brain disease. If, therefore, optic neuritis is found, the diagnosis of extension to the brain is certain, no matter whether other evidence exists or not."

Meningitis following the acute febrile diseases was then taken up, the author stating that often in these cases some eye symptom, as paralysis of one of the muscles or an optic neuritis, was at times the only symptom pointing to a brain complication. Hence the great importance of having the eyes examined in such cases.

TUBERCULAR MENINGITIS.

The author thought tubercular meningitis the most insidious disease of childhood; creeping on as it did from day to day in its prodromal stage, and even after the prodromal stage often manifesting itself in irregular forms, made the diagnosis very difficult.

The eye symptoms in tubercular meningitis, in the main, are the same as in simple meningitis; but, in rare instances, in addition, tubercular deposits may be seen in the choroid and iris of the eye. When these tubercular deposits are present in the eye, especially when other organs of the body—lungs, joints, glands, etc.,—are affected, they are of paramount importance in determining the character of the meningitis. Tubercles in the eye are so seldom seen, however, that observers differ in the estimation of their value for diagnostic purposes.

Undoubted cases of tubercular affection of the choroid and iris, both primary and secondary, have been observed, as proved on microscropic examination, by reinoculation and by cultivation.

Incidentally, the author called attention to the fact that the failure to obtain tubercle bacilli in the fluid after spinal puncture did not preclude the possibility of tubercular meningitis; for, if the eyes of rabbits be inoculated with the fluid, it sometimes sets up a genuine tubercular iritis, even though tubercle bacilli could not be found in the original fluid.

Again, if this cannot be practiced, a cultivation of the germs may be made and tubercle bacilli may be found (having developed from spores), though not present in the original fluid.

In conclusion, he urged the systematic examination of the eyes of children, both for motor and visual symptoms, in all conditions simulating meningitis; especially in those cases where there has been a long standing middle ear suppuration, in cases of pneumonia, pyæmia, empyema, septicæmia, etc, and cases giving a tubercular history and with glandular enlargements.

22 *East Forty-first Street.*

TYPHO-MALARIAL FEVER—A MISNOMER.

By WILLIAM S. STOAKLEY, M. D., Millboro Springs, Va.

We have in this era improved over former ones; we have the same propensities of all eras—that is, to expect and to claim advances and improvements over prior ones. To achieve something more than has been accomplished, is the ruling passion of the people of all eras.

In observing the efforts to effect this, we cannot fail to note the revolutions in opinions of the learned and unlearned—some with logical bases, and others with foundations that, when taken to pieces, refuse to go together again with proportional parts; thus they are "lapse-sided," and sway as spread-canvas with every brisk breeze—as learning, ignorance, superstition; these, together with the "list" given her

by crafty designers, go to make the old "ship of medicine" quiver from keel to keelson.

The cause of these upheavals is not in the science itself, wherever else it may be; for its foundation is like that of the hills in compositeness of proportionate parts; and its analysis of foundational parts, like the hills, too, will, by synthesis of the same, result in such balance and symmetry as to survive the glare of ultra literary pyrotechnics, disclose the weak turn of the unlearned and superstitious, and defy the changing styles of professional fashions, when they, like the feminine change of ribans, are for no better reason than mere phantasy.

We can, with some show of reason, attribute medical revolutions to the lack of moderation of its followers and want of appreciation of certain old rules of worth, such as, "Make haste slowly," "Be sure you are right, then go ahead."

We are not altogether sure we are right when we go ahead to make the mixture of animal and vegetable life and call it *typho-malarial fever* until we show the hybrid germ. Thus, to ignore the law of checks and balances, and establish precedent of never-ending comparative annexes, would finally bring us out exactly where we started, and not one whit the wiser, but woefully mixed in ideas as to the philosophical "hang" of the "natural status of things" in general, and the tenable position of our science in particular.

We grant the tenable new attachments without mental reservation, only contending for the reservation and preservation of such "old timbers" as have withstood the storms of many revolutions, and now "fit."

The *habitat* of this type of fever is the Southern portion of the country, and it would be a little singular for it to have started up just at the time Dr. Woodward encountered it; being a stranger in the section, necessarily the disease peculiar to that section could not be other than a stranger to him.

The Southern doctors began to mix these names prior to the war, and there were typhoid-pneumonias, "typhoid this," and "typhoid that"; there were "catarrhals" after the same fashion, and, as to malarial—well, they were plentiful as angle worms after a spring shower.

A man could not stump his toe or have the toothache without the malarial annex, because tendencies to periodicity seemed attachments to all affections, and quinine gave relief.

To what can we attribute this universal periodic "drift" but to latent malarial germs waiting for the opportune moment of ascendency on the "leveling principle" of the ruder forms of life—the misfortune of one being the fortune of the other? Eliminate the name "typho-malarial," still the *tout ensemble* of this disease reaches back as far as we can go.

Whilst thus far it seems germinally a misnomer, it furnishes an admirable perspective as to the actual state of things in such crises; but since we see fit to go back to roots, let us have no lapse-sided work in names.

In Virginia, we trace these miasmatic types back to the settlement (by tradition and otherwise) at Jamestown; that is to say, after the settlers got straight at work digging the soil. We have the Roman Campagna illustrative of some of the curious manœuvrings of the soil when disturbed, however beautifully it may behave when left alone.

Captain John Smith doubtless suffered from certain types of this affection, of which Laveran has found the germ in the blood. Whilst exploring the upper Powhatan river near the "falls" (site of Richmond), and while following the stream now called Chickahominy, he got stuck in the mud where the water was of good depth, was captured and conveyed to Gloucester Point—one of the King's residences—where, if I remember aright, he was sick; and no one can say that it was not just such an attack as the section would be apt to produce at that time as when Dr. Woodward encountered it. The malaria we know was there. As to the "typho," is it not more likely to be in a camp of Indians than in a camp of well-trained soldiers?

The prevailing fevers in Tidewater section of Virginia were classed as idiopathic and symptomatic, thus giving intermittent, remittent, and continued fevers. Besides these, there was another, which we were not long in finding out was a "stray sheep" and did not belong to the "flock," as it would not "herd with them." This latter disease (typhoid fever) was known as "slow fever," and was of rather rare occurrence in Tidewater Virginia. We noticed that, when it did occur, there were always fewer cases of intermittent, remittent and continued fevers prevailing. As we knew it then, we know it now, despite the new name and accoutrements, the latter though partially obscuring it "amidship." As is said of the fabled quadruped, its extremities will display themselves, *sui generis*. It luxuriates in soil that brings forth a sickly vegetable disease and one that refuses to bloom out in full regimentals.

The question as to the result of a malarial germ and typhoid germ being in the system at the same time is perplexing. Some make it a

mixture, others a modification. Whilst I venture simply "modification" as the result of the two different germs under circumstances stated, I reluctantly give the why for fear of a mixture of another sort in the attempt at giving reasons for saying that the two germs "may not mix," but modify each other. It is not always easy to express ideas.

It is well to know what is meant by this modification, how it comes about, and whether it implies the double name. One very naturally asks: If malaria has brought about this condition (modification), why deny the double name of the two elements? I answer: Because the separate germs prove distinct diseases, and *a fortiori* we lack the hybrid germ to entitle it to this. Granted that they are distinct diseases, have we found the typhoid and the malarial germ in the system at the same time? I think not. If not, why not? I answer: Because of this modification of which we were speaking above. They so disarrange the environments of each other that they cannot both appear at the same time, though both may be in the system. One is silent, but threatening, which latter attitude alters the aspect of the other. The claims of the one antagonize the other—the consequence is a disease. The result of such causes must be atypical in name, because neither one is genuine; and to mix names would mislead—in one way at least. This disarrangement changes accordingly the atomic elements of the one that goes on to development. The one that is developing is threatened by the latent one, which stands prepared to appear when environments suit. Environments cannot suit both at the same time; one must be latent.

As to the names, either one can be atypical, and *apriori* neither one can be mixed, yet both are altered.

I offer this as my theory, but do not presume that it is the proper one, and give it only as my belief—as something of a reason why we should not mix in name what refuses to do so under natural law. Atypical forms occur in all diseases and under the laws of nature, hence with significance are the proper designations where certain variations from the standard types occur.

For Vomiting of Pregnancy.

Dr. Weil states (*Practitioner*) that a twenty per cent. solution of *menthol in olive oil*—dose, ten drops on sugar whenever nause appears—will relieve every form of vomiting during gestation.

GASTRO-INTESTINAL AND HEPATIC RELATIONS OF GOUT.*

By CHARLES G. STOCKTON, M. D., Buffalo, N. Y.,

Professor of the Principles and Practice of Medicine, and Clinical Medicine, Medical Department University of Buffalo; Attending Physician Buffalo General Hospital.

The formation of uric acid has been by many observers referred to the liver, and gouty attacks have been supposed to depend upon disturbances of that organ.

Although true podagra is uncommon in Americans, the condition described by Murchison as lithemia is commonly seen here. In the latter condition, one observes primary congestion of the liver, headache, lassitude, etc., but rarely evidences of deposits, arthritic or otherwise, and characteristic attacks of gout are absent. This leads to the question: Is lithemia gout? or is it the expression of a toxemia resulting from habitual disorder of the digestive organs, including the liver?

It was shown, by the evidences accumulated by Garrod, Roberts, Luff, and others, that "uric acid is not normally present in the blood of man or other mammals, nor in the blood of birds." Second, that "uric acid is normally produced in the kidneys only, and is formed from urea, probably by the conjugation of that substance with the glycocin in the kidneys." This points to the relation between the disturbance of the liver and the appearance of uric acid and urates in the urine.

It was also shown that uric acid is diminished in gout, and that when the kidneys have temporarily declined in their power of elimination, uric acid in the form of urates appears in the blood, and in the form of biurates of soda, may be deposited in the joints. The proposition that gouty deposits do not follow merely because there is uric acid in the blood may be proven by the fact that in leukemia and other affections there is found a large amount of uric acid in the blood, arising from nucleinic acid, but in these diseases deposits in the joints and gouty symptoms are not observed.

It was thus shown, *first*, that gout does not depend upon the continued presence of the excess of uric acid in the blood; *second*, that the formation of uric acid in the kidneys is disturbed in case of gout, probably as the result of some disorder of the liver; *third*, that disorders of the liver, unaccompanied by gout, are capable of deranging the normal uric acid output.

* Abstract of a paper read before the American Medical Association, Section on Practic of Medicine, during Semi-Centennial Session in Philadelphia, June 1–4, 1897.

It is held that lithemia is not gout, but that it is the expression of an intoxication of gastro-intestinal origin, and that relief of the condition does not follow the most successful treatment for gout, but that it does follow the careful correction of gastro-intestinal digestion. This may be proven by the careful study of the stomach contents and the urine of those who are victims of lithemia. Additional proof may be found in studying the results of diet. Although fruit juices and fermented liquors are objectionable in both conditions, it will be found that an albuminoid diet, particularly lean beef, is often the best diet for the lithemic, although this diet is usually most objectionable in true podagra. An active life, out of-doors, is the best antidote for gout, as it is for lithemia. This, however, does not prove a relation; all forms of gastro-intestinal disorders are relieved by the same method of hygiene.

These remarks lead to the *conclusions:*

First. That gout is a definite disease, to which certain individuals are predisposed, but which depends for its development upon causes largely unknown.

Second. That laziness, a full nitrogenous diet, and the use of fermented liquors predispose to the disease.

Third. That so-called lithemia, as the term is popularly applied, is not gout, but is an auto-intoxication depending upon gastro-intestinal and hepatic derangements.

Fourth. That *the diet in gout* should be largely free from nitrogenous substances.

Fifth. That *the diet in lithemia* must be ascertained by the careful study of the primary digestion, the urine, and the general health of the patient, but a nitrogenous diet is often the most satisfactory one.

436 *Franklin Street.*

TREATMENT OF CIRCUMSCRIBED PELVIC HEMORRHAGE.*

By M. ROSENWASSER, M. D., Cleveland, Ohio.

To avoid the confusion caused by the term "pelvic hematoma," "pelvic hematocele," "intra and extra peritoneal hematocele," the author distinguishes two clinical varieties of pelvic hemorrhage; *free* hemorrhage being active hemorrhage into the abdominal cavity without tumor formation, and *circumscribed* hemorrhage, in which active hemorrhage has ceased and the blood has become encysted, forming a distinctly palpable tumor.

The treatment of free hemorrhage is by immediate abdominal section. This variety, however, constitutes not more than one-fourth of all cases of pelvic hemorrhage.

The bulk of cases seen by us belong to the variety the author calls circumscribed. They are cases that have been delayed, or have been unrecognized, or have been accidentally stumbled upon long after recovery.

Not more than 40 per cent. of cases of circumscribed hemorrhage require surgical interference. When called to a case of this kind, unless there be a distinct indication for immediate operation, the author places the patient at *absolute rest* in a *hospital* or under *reliable* supervision. Cases that continue improving are left undisturbed until well. Cases that show any signs of growing worse are operated upon without further delay.

Of thirty-five cases thus treated, eighteen have been restored to perfect health without operation. Of the remainder, one refused operation, one left the hospital before full recovery, and fifteen were operated on with four deaths. Three of the deaths were due to far advanced sepsis previous to operation in cases not recognized by the attending physician. The details of twenty-three cases have been previously reported, and twelve are submitted with the present paper.

The author's experience with cases of circumscribed pelvic hemorrhage, leads to the following conclusions:

1. That unless they require immediate operation for cause when first seen, they can be submitted to careful supervision in hospital or home without danger.

2. That when thus watched, more than one-half will get well without operations by keeping them at absolute rest for an average period of six to eight weeks.

3. That when they cannot be watched, or refuse to rest, early operation is to be urgently recommended.

4. That operation is necessary only for special indications, of which the most important are sepsis with or without suppuration, recurrent hemorrhage, growth of tumor, non-absorption after reasonable time, and compression of the pelvic viscera (rectum or ureter).

5. Abdominal section is to be preferred to vaginal incision in most cases.

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* Abstract of a paper read before the Section of Obstetrics and Diseases of Women of American Medical Association.

Correspondence.

Study of the American Medicir al Flora.

The Sub-Commission of the Pan-American Medical Congress, appointed to study the medicinal plants of the United States, has entered into an association with the Smithsonian Institution for that purpose. The attention of our readers is called to the respective circulars issued by these organizations, which we print below:

SMITHSONIAN INSTITUTION,
WASHINGTON, D. C., May 28, 1897.

Dear Sir,—The Smithsonian Institution has undertaken to bring together all possible material bearing on the medicinal uses of plants in the United States. Arrangements have been made with a body representing the Pan American Medical Congress, the Sub-Commission on Medicinal Flora of the United States, to elaborate a report on this subject, and the material, when received, will be turned over to them for investigation.

The accompanying detailed instructions relative to specimens and notes have been prepared by the Sub-Commission.

All packages and correspondence should be addressed to the Smithsonian Institution, Washington, D. C., and marked on the outside *Medicinal Plants, for the U. S. National Museum.*

Franks which will carry specimens, when of suitable size, together with descriptions and notes, free of postage through the mails, will be forwarded upon application. Should an object be too large for transmission by mail, the sender is requested, before shipping it, to notify the Institution, in order that a proper authorization for its shipment may be made out.

Respectfully,
(Signed), S. P. LANGLEY, *Secretary.*

Instructions Relative to Medicinal Plants.

The Pan-American Medical Congress, at its meeting held in the City of Mexico in November, 1896, took steps to institute a systematic study of the American medicinal flora, through the medium of a General Commission and of special Sub-Commissions, the latter to be organized in the several countries. The Sub-Commission for the United States has been formed, and consists of Dr. Valery Havard, U. S. A., Chairman; Mr. Frederick V. Coville, Botanist of the U. S. Department of Agriculture; Dr. C. F. Millspaugh, Curator of the Botanical Department of the Field Columbian Museum, Chicago; Dr. Charles Mohr, State Botanist of Alabama; Dr. W. P. Wilson, Director of the Philadelphia Commercial Museums; and Prof. H. H. Rusby, of the New York College of Pharmacy. This Sub-Commission solicits information concerning the medicinal plants of the United States from every one in a position to accord it. The principal points of study are as follows:

1. Local names.
2. Local uses, together with historical facts.
3. Geographical distribution and degree of abundance in the wild state.
4. Is the plant collected for market, and if so,
   (a) At what season of the year?
   (b) To how great an extent?
   (c) How prepared for market?
   (d) What is the effect of such collection upon the wild supply?
   (e) What price does it bring?
   (f) Is the industry profitable?
5. Is the plant, or has it ever been, cultivated, and if so, give all information on the subject, particularly as to whether such supplies are of superior quality, and whether the industry has proved profitable.
6. If not cultivated, present facts concerning the life history of the plant which might aid in determining methods of cultivation.
7. Is the drug subjected to substitution or adulteration, and if so, give information as to the plants used for this purpose.

While it is not expected that many persons will be able to contribute information on all these points concerning any plant, it is hoped that a large number of persons will be willing to communicate such partial knowledge as they possess.

It is not the important or standard drugs alone concerning which information is sought. The Sub-Commission desires to compile a complete list of the plants which have been used medicinally, however trivial such use may be. It also desires to collect all obtainable information, historical, scientific and economic, concerning our native and naturalized plants of this class, and, to that end, invites the co-operation of all persons interested. Poisonous plants of all kinds come within the scope of our inquiry, whether producing dangerous symptoms in man, or simply skin inflammation, or, as "loco-weeds," deleterious to horses, cattle and sheep. In this respect, the general reputation of a plant is not so much desired as the particulars of cases of poisoning actually seen, or heard from reliable observers. It is believed that much interesting knowledge can be obtained from Indians, Mexicans and half-

breeds, and that, consequently, Indian agencies and reservations are particularly favorable fields for our investigation. Such knowledge will be most acceptable when based upon known facts or experiments.

In order to assist in the study of the habits, properties and uses of medicinal plants, the Sub-Commission undertakes to furnish the name of any plant-specimen received, together with any desired information available.

Owing to the diversity in the common names of many plants, it will be nec ssary for reports, when not furnished by botanists or others qualified to state the botanical names with certainty, to accompany the same with some specimen of the plant sufficient for its identification. While the Sub-Commission will endeavor to determine the plant from any portion of it which may be sent, it should be appreciated that the labor of identification is very greatly decreased and its usefulness increased by the possession of complete material—that is, leaf, flower and fruit, and, in the case of small plants, the underground portion also. It is best to dry such specimens thoroughly, in a flat condition under pressure, before mailing. While any convenient means for accomplishing this result may be employed, the following procedure is recommended: Select a flowering or fruiting branch, as the case may be, which when pressed shall not exceed 16 inches in length by 10 inches in width. If the plant be an herb 2 or 3 feet high, it may be doubled to bring it within these measurements. If it possess root leaves, some of these should be included. Lay the specimen flat in a fold of newspaper and place this in a pile of newspapers, carpet felting, or some other form of paper which readily absorbs moisture, and place the pile in a dry place under a pressure of about 20 to 30 pounds, sufficient to keep the leaves from wrinkling as they dry. If a number of specimens are pressed at the same time, each is to be separated from the others by three or four folded newspapers, or an equivalent in other kinds of paper. In 12 to 24 hours, these papers will be found saturated with the absorbed moisture, and the fold containing the specimen should be transferred to dry ones. This change should be repeated for from two to five days, according to the state of the weather, the place where the drying is done, the fleshiness of the specimens, etc. The best way to secure the required pressure is by means of a pair of strong straps, though weights will do. The best place for drying is beside a hot kitchen range. When dry, the specimens should be mailed between cardboards, or some other light but stiff materials which will not bend in transit.

It is a most important matter that the name and address of the sender should be attached to the package, and that the specimens, if more than one, should be numbered, the sender retaining also specimens bearing the same number, to facilitate any correspondence which may follow. The Sub-Commission requests that, so far as practicable, all plants sent be represented by at least four specimens.

(Signed), H. H. Rusby, M. D.,
Chairman of the General Commission,
New York College of Pharmacy.

Valery Havard, M. D.,
Chairman of the Sub-Commission,
Fort Slocum, Davids Island, New York.

Proceedings of Societies, etc.

RICHMOND ACADEMY OF MEDICINE AND SURGERY.

Dr. Mark W. Peyser, Secretary and Reporter.

Regular Meeting held June 22, 1897.

Dr. J. N. Upshur, President, in the chair.

Dr. Mark W. Peyser read a paper on—

Digestive Ferments. [See page 195.]

DISCUSSION.

Dr. H. H. Levy thought Dr. Peyser correct concerning the too free use of pepsin and the pancreatic enzymes, and that stimulation, rather than help, was better for the proper activity of the digestive organs. The conditions for secretion should be made more favorable by administration of acids and alkalies. In conclusion, he said the test meals afforded a scientific diagnosis—whether the fault lay in hyperchloridia, hypochloridia, etc.

Dr. J. S. Wellford thought that, as trypsin and the other pancreatic enzymes were nitrogenous in character and, therefore, likely to be acted upon in the stomach, it was useless to give them, unless they could be so prepared as to be made invulnerable until the duodenum was reached.

Concerning pepsin, it should never be administered in combination with bismuth, as the latter exerted a katalytic action upon pepsin, which should always be given in an acid solution.

Dr. Levy wished to ask why pepsin, which was also nitrogenous, was not acted upon by the gastric juice?

Dr. Wellford replied that he could conceive of no other reason than that pepsin was a natural ingredient of the juice, and therefore not likely to be acted upon.

Dr. Peyser, in closing the discussion, said one of the very points that he wished brought out in his paper was involved in Dr. Wellford's remarks. The stomach, not being acid in the beginning of digestion, the pancreatic enzymes could be given in solution at the beginning of a meal with the almost perfect certainty that they would reach the duodenum before they could be acted upon in the stomach.

As for the balance of the paper, he was glad to know he was in such accord with the Academy.

Analyses, Selections, etc.

The Pathogenesis of Locomotor Ataxia.

In a carefully prepared statistical paper, read before the Neurological Section of the Philadelphia meeting of the American Medical Association, Dr. L. Harrison Mettler, of Chicago, reviews the various theories of the cause of posterior spinal sclerosis. An analysis of the arguments and figures of those who favor, as well as of those who oppose, the syphilitic origin of the trouble leads the author to conclude that locomotor ataxia is not a syphilitic manifestation. Many cases occur in which there has been no history of lust, and in one case, specific disease was contracted many years after the patient revealed disease of the posterior spinal columns. It must be admitted, however, that syphilis plays an important part in the etiology. As a predisposing cause, it is probably the most important, or at least most frequent, factor; but other toxins in the blood may act, in many cases, in predisposing towards locomotor ataxia as well as the syphilitic poison, The lesions of spinal syphilis are not the same as those of locomotor ataxia, so that we must fall back upon the statement that posterior spinal sclerosis is only a sequel of syphilis or the result of some special cause operating upon nervous structures, vitiated by the toxin in the blood.

These special causes may be many and various, but the author of the paper thinks that some histological change or neurotic taint, inherent in the nerve elements themselves, is the determining cause in the establishment of posterior spinal sclerosis. In view of the latest investigations, it would seem that locomotor ataxia is a degenerative disease of the entire cerebro-spinal apparatus chiefly of the sensory, but sometimes of the motor elements also. The question naturally suggests itself, then, why are the posterior spinal columns so frequently the original site of the trouble? To answer this question, many theories have been plausibly advanced. Porter supposed the condition of the posterior spinal arteries had something to do with it. Spitzka saw a reason for it in the reticulated, closely-interwoven fibrous mesh in the lumbar part of Burdach's columns. Obersteiner, adopting the view that the disease is primarily an affection of the posterior roots, thinks that compression of these roots by the specifically diseased spinal membranes, where they surround the roots, is the origin of the upward degenerative process. Others have suggested gravity, genito-spinal overexcitation, traumatism, etc., as determining factors. All these theories fail, however, when the wide distribution of the disease, with its peripheral as well as central manifestations, is remembered.

The hereditary form (Freidreich's disease) of locomotor ataxia, as well as certain embryological observations recently made in connection with it, and noted by the author, would seem to strengthen the view that in the histology of the cerebro-spinal sensory elements we must look for the real determining cause. In the maids of Leyden, locomotor ataxia "may be considered as a chronic, atrophic degenerative process of the spinal cord, originating in the posterior roots and connecting itself with certain distinct embryonic fibre symptoms." Given this peculiar histological condition in the sensory apparatus of certain individuals, it is readily conceivable how such an abnormality may be thrown into a state of disease or progressive degeneration any where throughout the nervous mechanism by the action of a universal poison such as the syphilitic toxin floating in the blood.

Dyspeptic Cirrhosis of Liver.

Dr. Émile Boix, Interné Lauréat des Hôpitaux de Paris, etc., in his recent valuable monograph on the *Liver of Dyspeptic, and particularly the Cirrhosis Produced by Auto-Intoxication of Gastro-Intestinal Origin*, points out that alcohol is by no means the sole cause of cirrhosis of the liver, as so generally taught in books and colleges. In summarizing his studies, he draws the following

CONCLUSIONS.

1. Alcohol is not everything in the *etiology of cirrhosis of the liver*. Its pathogenic role demands a searching inquiry, which a long

term of years can alone bring to a successful termination. In fact, it is indispensable that the condition of the alimentary canal should be carefully investigated with those suffering from cirrhosis, and an attempt made to ascertain if, with them, fermentations of gastro-intestinal origin do not give rise to the production of substances which are endowed with properties both irritating and toxic to the liver.

2. Entirely independent of the alcoholic habit, we frequently encounter a pathological condition of the liver with dyspeptics which is manifested by increase of the size of this organ—it is the *dyspeptic liver.*

3. This increase of the size is temporary or permanent. *Temporary*, with frequent returns, it constitutes the *hepatic congestion*, noticed for a long time by various authors, and especially by M. Bouchard. *Permanent*, it is *dyspeptic cirrhosis.*

4. This *dyspeptic cirrhosis* (described for the first time in this work) *is manifested: Clinically*, by an enlarged liver, smooth, *remarkably hard* (like wood), without increase in size of the spleen, without icterus, ascites, or development of the collateral abdominal circulation; *histologically*, by a diffused generalized cirrhosis, inter- and intra-lobular, with mono-cellular tendency, with relative integrity of the hepatic cells.

5. *The duration* of such an affection is very long—ten years and more—the size of the liver remaining almost the same. *The termination* may take place, as in the atrophic cirrhosis of Lænnec, by exaggeration of the mechanical interference and production of ascites and enlarged abdominal veins, and also by terminal infection. *The prognosis* is then, as always, connected with the condition of the hepatic cells.

6. Among the *toxic substances* which are *elaborated* in the alimentary canal, we must consider the *acids of fermentation* as possessing a *marked sclerogenic action*—butyric, lactic, valerianic, and especially acetic acid. As to *coli-toxin*, it is probable that it also has a sclerosing action upon the liver, unless it reaches this organ in an amount sufficient to rapidly destroy the hepatic cells.

7. We must also take into consideration the predisposition most frequently created by the gouty diathesis (*arthritisme*, Hanot).

8. *Dyspeptic cirrhosis* can only be *confounded with cancer of the liver*, from which it is distinguished by its very long duration; *or with a large lithiasic liver* (*lithiasique*), which is most frequently accompanied by icterus; *or with an enlarged alcoholic liver*, with which we will ordinarily find a large spleen, and very soon ascites and enlargement of the subcutaneous abdominal veins.

9. *The treatment* should be especially addressed to the digestive functions. Intestinal antisepsis will be of very great assistance, and will give very satisfactory results, especially in the congestive forms. Calomel, in the dose of one centigram, may be successfully prescribed.

The Technique of Vaginal Section, Irrespective of Hysterectomy, for Diseased Appendages and Small Pelvic Tumors.

This is the subject of a paper presented at the recent meeting of the American Medical Association, Section of Gynæcology, by Dr. Augustin H. Goelet, of New York. He says anything that will lessen the shock in operations, reduce the mortality, and shorten convalesence, is a decided advance in our methods, which is true of vaginal section when done under proper indications. But it is an error to think that vaginal section will supersede abdominal section. Both have their natural limitations, based upon—

(1) The ease with which the operation may be completed.

(2) The complications which may develop as the operation proceeds.

(3) The danger which the operation incurs.

(4) The immediate, as well as the remote, results, including the necessity for drainage.

The advantages of vaginal section are stated as follows:

(1) The patient will more readily consent to a vaginal section; hence, hopelessly diseased organs may be removed earlier, and the mortality is thereby lessened and her suffering relieved earlier.

(2) The surgeon would not hesitate to advise vaginal section in conditions which do not seem to present sufficient gravity to warrant the risk of abdominal section.

(3) Where exploration of the pelvis is necessary to clear up the diagnosis, where the diseased condition is not extensive, and where the adhesions are not dense or numerous.

(4) When subsequent drainage is certain to be required, it is more perfectly secured through a vaginal incision.

The operation is applicable in the following conditions:

(1) In ovarian cysts of considerable size, since the fluid can be evacuated and the sac withdrawn through a small vaginal incision.

(3) For pyosalpinx, hydrosalpinx, and hæmatosalpinx.

(5) For the removal of small subperitoneal fibroids by myomectomy.

(6) For drainage of pus accumulations situated low down in the pelvis.

(7) For hæmatoma and hæmatocele, including ectopic gestation.

(8) For pelvic exudations which resist other means for their removal. He has had excellent results from persistent faradization in these last-named conditions, hence he believes that surgical interference is seldom required where suppuration has not occurred.

The technique of the operation is described in detail and very concisely.

In conclusion, the author states that complete union of the vaginal incision usually takes place in from six to eight days, even when the gauze drain is employed, and the patient may be gotten out of bed at the end of two weeks. It is, he says, the exception when any rise of temperature follows this form of vaginal section, and convalesence is, as a rule, rapid and uneventful.

Prostatic Hypertrophy—A New Operation.

Dr. W. E. Reller, Council Bluffs, Iowa, describes (*Hahnem. Monthly*, July, 1897,) a new operation for prostatic enlargement. This operation is still on probation, but that it will accomplish good results, in certain conditions, has been proven. His experience with this method is limited to a single case, but the result was brilliant.

A gentleman, 79 years of age, quite corpulent, for many years had retention of urine. For eighteen years, he had been obliged to use a catheter to empty his bladder. During the last five years, he has had several attacks of inflammation of the prostatic urethra and neck of the bladder, during which he was unable to introduce his soft rubber catheter. The prostate gland was very much enlarged and indurated. During 1895 and 1896, Dr. Reller used the steel sounds, with the result that he was comfortable. During all this time, he used his catheter about every two hours during the night and almost every hour during the day. In May, 1896, he had another attack, and I was obliged to draw his urine every three and a half to four hours with a metal catheter, day and night, for six weeks. The urethra was very torturous, and at times it took considerable manœuvering to introduce the catheter. After constant attention for more than two months, he recovered so that he could use his soft catheter, but within ten days he was obliged to again call for help. Opium suppositories were introduced high into the rectum. It was soon necessary to increase the opium; by July 1 he was taking a suppository, containing four grains of opium, every six hours.

On July 17, 1896, consent to operate was given. The pubes were shaved and the field of operation rendered thoroughly antiseptic. An incision was made about two inches in length, starting a little above the external ring, extending downward, parallel with the cord. The vas deferens was then picked up and severed, the cut ends were turned back on themselves, and the loop thus made ligated with catgut. The spermatic artery was then ligated with chromatized catgut. Each side was treated the same way. The wounds were closed with interrupted silk ligatures and dressed with gauze and a bandage. The wounds healed nicely, there being very little discharge. There was no perceptible change until the tenth day after the operation, but from that time on there has been a constant improvement. The first improvement was the gradually increasing facility with which the catheter could be introduced. Later, he said that "he felt better than he had for years." He still uses his catheter once or twice a night, and every four or five hours during the day. The prostate gland is very much diminished in size, and the testicles are about three-fourths their former size.

Some may think it unnecessary to cut the vas deferens, and that ligation will answer just as well. This may be true, if the ducts were thoroughly constricted with strong silk cord. I ligated the spermatic arteries to obtain speedy results. By cutting off the arterial supply, atrophy was much more rapid than it would have been otherwise.

In an ordinary subject the operation is comparatively simple, but in a very corpulent patient some difficulty may be encountered on account of excessive adipose tissue.

At the time of this operation I could find reports of only five of similar character; no operator had had more than two cases. But the results of all were, in the main, the same as I have just related. The advantage of this method over castration is self-evident, the latter being much more dangerous, and the patient will object much more to it than to the former.

The philosophy of the operation is based on the fact that ligation of the vas deferens or spermatic artery causes atrophy of the testicles. Ligation of the vas deferens caused atrophy of the prostate gland, and this is the object in view when performing the operation. By causing atrophy of this gland the torturous urethra is straightened and the dam in the bladder,

caused by the hypertrophy of the prostate, is, in a measure, removed, thus doing away with the residual urine, which is the cause of the recurrent attacks of cystitis to which these sufferers are usually subject.

Persecution of Consumptives.

Just a hundred years before the discovery of the tubercle bacillus, a law was passed in Naples (*N. Y. Med. Jour.; Med. Brief*), on the recommendation of the highest medical authorities, regarding the isolation of tuberculous patients. This law was enforced from July 17th, 1782. The following were some of the provisions of that sanitary law:

1. Every physician was obliged to report every case of pulmonary phthisis directly he was enabled to establish its diagnosis. Failure to comply with this requirement of the law was punishable by a fine of three hundred ducats. For a second similar offense an irrevocable exile of ten years was prescribed.

2. Poor patients were transferred to a hospital as soon as the diagnosis was established.

5. All furniture in use in rooms occupied by phthisical patients was to be burned, or rendered innocuous by other means.

6. The local magistrates were empowered to cause all rooms occupied by such patients to be renovated by calsomining, painting, and papering the walls and ceilings. They were further empowered to replace all woodwork in the room, such as floors and windows, with new material.

8. A penalty was inflicted upon those who bought or offered for sale any article of furniture that had had a place in a room previously occupied by a phthisical patient.

Regarding the unusually severe law, Uffelmann (*Berl. Klin. Woch.*) says that he believed tuberculous patients were placed in the same category as those suffering from the pest. Having once appeared in a family, tuberculosis, according to the edict to the law of Naples, was one of the severest afflictions and hardships that could have occurred to a family. Such a family was refused a residence by all house and land owners. Driven from place to place, the head of the family soon saw his business and occupation disappear, only to be replaced by poverty and misery. Houses in which phthisis had developed were shunned. There was no restitution and no indemnity by the authorities. Indescribable hardships, says De Renzi (Storia della Medicina in Italia), followed the operation of this obnoxious law. Regardless of public sentiment, and the opposition raised by some members of the medical profession of Naples, the government put the law into practice with a severity and strictness that was almost unknown previously.

But with what effect? Absolutely nothing was effected by these inhuman measures. At the expiration of fifty-six years, during all of which time the law was in operation, there was no diminution in the number of tuberculous patients, the disease prevailing with the same severity and fatality.—*Medical Standard*, July, 1897.

Jeguerity in Treatment of Trachoma.

Dr. William Cheatham, Professor of Ophthalmology, etc., Louiiville Medical College, concludes a paper on this subject (*Louisville Med. Monthly*, July, 1897), as follows: "Gentlemen who have had one or two unfortunate results in the use of jeguerity should try it again. I am sure they will be pleased with it if properly used, in the form of a powder, in properly selected cases." He has used it in all stages of trachoma, *except the acute*, with nothing but the best results. He has never seen ulcer of the cornea follow its use. While he has seen a few cases of xerosis after using it, but he is not positive that any depended on its use, or was the direct after-effect of this medication. One of his assistants, while squeezing a trachoma, became inoculated. His eyes stood no treatment well; corneæ were extremely irritable. All the mydriatics increased the irritation, and all treatment made his eyes worse. He compressed the trachomatous bodies twice. He kept the patient in the Infirmary for months, but no treatment brought good results. Dr. Cheatham finally determined to use jeguerity, without the patient's knowledge, as he feared it. The cornea, beside being extremely irritable, had several abrasions on it. A small portion of weak infusion of powdered jeguerity was carefully applied with a cotton mop to the lids two days in succession. Little or no reaction followed, but his eyes improved very rapidly. The application was repeated three or four times. The doctor is now a busy practitioner, and suffers little or none with his eyes.

Another case, young lady, aged 19, with pannus of left cornea. Just above, and overlapping the right cornea, she had a mass of trachomatous bodies. Powdered jeguerity was once dusted into the left eye, promply relieving the pannus. Under two applications to the right eye, the mass of trachomatous bodies disappeared.

"I know of no other treatment so safe that will give such a result." Before expression

came into use, he used powdered jeguerity occasionally in cases without pannus with none but favorable results. He has had cases with extreme pannus led into his office, unable to find their way; who, under the use of jeguerity, were able, in six or eight days, to come alone. Mary L.; V. R.=T. to V. L.=$\frac{20}{200}$. Jeguerity used in both eyes; repeated once. Ultimate result: V. R.—$\frac{20}{70}$, V. L.=$\frac{20}{50}$. Such cases are common in his experience. He sees fewer cases of trachoma now in which jeguerity is indicated than he used to do, because trachoma is, he believes, now recognized earlier, and treated more intelligently.

Very weak infusions of jeguerity are often of much benefit; but he most frequently uses the powder. Severe re-action is much less frequent; the application can be better confined, and the powder does not degenerate in time. The powdered jeguerity he now uses has been made for some years, and is as active to day as when fresh; but he is more careful now in the selection of cases than formerly; yet he would not hesitate to use jeguerity in any case in which other methods had failed him. *In select cases of trachoma with pannus*, he knows of nothing that will take the place of jeguerity.

Hyoscyamine for Paralysis Agitans.

Dr. Chalmere, of Chicago, it seems recently made some favorable reports in the *New York Medical Journal* regarding the use of hyoscyamine in this heretofore *bête noir* of our profession. Since then, hyoscyamine has been coming to the front with promise of relief for this most troublesome and intractable disease. Even a temporary relief, as the *Medical Times*, July, 1897, well says, for this distressing condition, obtained without injury to the system, will be hailed with gratitude. The accumulating experience of the profession makes every case of well-marked paralysis agitans a sufficient warrant for a test of hyoscyamine. The case of a clergyman is cited whose shaking of the head and right upper and lower extremities had been on the increase for years. *A drop* of a solution of hydrobromide of hyoscyamine —two grains to the ounce—was dropped into the eye. In twenty minutes, the shaking had entirely ceased, and at the end of three-quarters of an hour speech was difficult, and the patient was unable to rise from his chair. This partial paralysis gradually disappeared—there being no return of the shaking for several hours. In this case, as in another, the use of one drop of a solution of one grain to the ounce was sufficient, applied at stated times, to keep the patient entirely comfortable.

Book Notices.

Handbook of Medical Climatology. By S. EDWIN SOLLY, M. D., M. R. C. S., Late President of American Climatological Association. *Illustrated in Black and Colors.* Lea Brothers & Co., Philadelphia and New York. 1897. Cloth. 8vo. Pp. 470.

So far as we recall, this is the first systematic treatise on medical climatology published in this country. The author has given the subject thirty years of study, and founds his theories and conclusions from data collected from all parts of the world. The doctor who prescribes travel, the traveller himself, and the rising generation of medical students are the especial classes of readers expected for the book. It embodies the principles and therapeutic application of medical climatology, with scientific data of the chief health resorts of the world—giving, however, most prominence to resorts on this continent, and very naturally treating in greatest detail of the resorts in the Colorado section of the United States. The plan of the book seems to be perfect. The basis of medical climatology is climatic physics, including portions of meteorology, geography, geology, botany and zoology. Next to study is physiology, so far as the general and particular influences of climate upon the human organism are concerned. Ethnology, or the distinctions of race as related to climates, etc., are then treated of. Geographical pathology, or the natural distribution of disease as concern climate, soil, etc., then engages attention. After a classification of climates, as to sea and land, temperature and humidity, etc, the subjects of general climate-therapy and then of individual climate-therapy are taken up. After a study of special climates and regions, then the individual case and its appropriate climate is fully considered. Of the specially named diseases for which climate-therapy is prescribed, 80 pages are devoted to phthisis and tuberculosis; croupous and catarrhal pneumonia, pleurisy, empyema, bronchitis, bronchial and nasal asthma, nasal and pharyngeal catarrhs, and chronic laryngitis take up 7 pages. A little over 4 pages are given to diseases of the heart and great vessels, including aneurism. About six pages are given to nervous disorders, such as insomnia, epilepsy, sunstroke, neurasthenia, etc. The influence of climate upon kidney, liver, stomach and bowel diseases takes up 11 pages; gout and rheumatism, 2 pages. About 180 pages, beside relief and other maps, are devoted to descriptions or mentions of health resorts in North America. South America

claims only 7 pages; Europe, 40 pages; Africa, Asia and Australasia, 13 pages; and the island climates, 17 pages. A goodly number of temperature and rainfall tables, etc., are arranged throughout the book.

Such a book as this—being the only systematic treatise on medical climatology by an American author, and having as many excellencies as it has—deserves nothing but the friendliest criticism. Valuable information, thoroughly sustained by authorities quoted, is given on every page; and as to the style in which it is imparted, every chapter is entertaining—many parts having the charm of romance. Possibly, when the author undertakes revision for the next edition, he may recognize the propriety of saying something of the special classes of disease for which certain resorts have special values. Thus, skin diseases, syphilis, etc., are not indexed, nor are any of the special claimed values of Hot Springs, Va., or Hot Springs, Ark., etc., stated. Deer Park, Md., has a well-established reputation for certain asthmatics; Alleghany Springs, Va., has a special reputation for dyspeptics, etc.; but we allude to these resorts only to illustrate what we mean by the suggestion that the chief claims of the resorts might be added with advantage to the book.

Fourteenth Annual Report of the Bureau of Ethnology to the Secretary of the Smithsonian Institution, 1892-3. By J. W. POWELL, Director. *In Two Parts.* Washington Government Printing Office, 1896. Large 4 to. Pp. 1136. Cloth.

These two well illustrated volumes constitute a part of the work of the Bureau of American Ethnology in continuance of researches among the American Indians. Beside the usual official statement of the operations of the Bureau during the fiscal year, ending June 30, 1893, the remainder (nearly all of the volumes) consists of a series of memoirs on anthropologic subjects prepared by assistants. The entire Report is full of interest detailing the habits and characteristics of different tribes of Indians in United States Reservations. It tells of battles and methods of education to civilize and christianize; and speaks of the habits of the "Medicine Man." In short, it is a history of the tribes and their managementby the Government. Such a work cannot be reviewed in a journal such as this; but one cannot turn scarcely to a page of either of the immense volumes without finding record of something that interests him until he is beguiled into reading page after page of the Report. It is a most excellent work of instruction to the general and professional reader about the North American Indians, etc. Maps and pictures are abundantly used in illustration of the text.

Editorial.

Medical Society of Virginia.

The preliminary postal card announcement of the Twenty-eighth Annual Session of the Medical Society of Virginia at Hot Springs, Bath county, Va., has been issued. Already the Secretary has received assurances enough to indicate that the session will be one of the most attractive in its history. The Chesapeake & Ohio R. R. has agreed to a *one fare round trip* on the certificate plan from all points along its route in Virginia and West Virginia, for members of the families of the doctors as well as the doctors themselves. If any doctor who reads this notice wishes to bring his lady with him to the session, to be held August 31st, September 1st, 2d, and possibly 3d, he should at once notify the Recording Secretary, Dr. Landon B. Edwards, Richmond, Va., in order that proper authority to secure the one fare round trip ticket over the C. & O. Railway may be secured. The hotel manager of the Hot Springs has agreed to a per diem rate of $2.00 during the week. As Hot Springs is a delightful summer resort, as well as a most reputable health resort, and as no other State Society is in session in the United States about the same season, it is confidently expected that many fraternal delegates from several of the States will be present. In our first issue for August, a full statement of the programme will be given. In the meantime, every Fellow of the Society should be active in inducing all worthy doctors in his neighborhood, entitled to membership, to forward their applications for fellowship to the Secretary. The annual expense is only $2.00 for membership.

Medical Examining Board of Virginia.

Full report of the recent session of the Board and its examinations will be in the next issue of this journal. Nearly 150 parties appeared for examinations on nine distinct branches. The labor of the Board in passing on the papers presented during the three days of examination of so many applicants may be surmised when it is calculated that there were not less than about 7,500 legal cap pages of manuscript—good, bad, and horrible—to be carefully read and rated. It is an honor to be

a member of the Virginia Board, it is true, beyond that which usually belongs to the name of a member of a State Board of Medical Examiners; for the Virginia Board—so far as the regular profession is concerned—is composed of *doctors chosen by doctors* (the *Medical Society of Virginia*), and are not political appointees of a political Governor. So that the Virginia Examiner who faithfully does his duty merits a special honor. It is a pleasure to bear testimony to the zeal manifested by each of them in the faithful and able discharge of duty. In short, each of them is in love with the profession they honor.

We will not anticipate the official report of the Secretary, Dr. R. S Martin, of Stuart, Va., further than to announce that the *next meeting* of the Board will be held at Hot Springs, Bath county, Va., at 8 o'clock Monday night, August 30th, 1897, for routine work. *Examinations of applicants* will begin *promptly* at 9 A. M. Tuesday, August 31st, and will continue three days. Applicants who failed to pass the recent examinations can come up at the Hot Springs session.

An Army Medical Board

Will be in session at Washington City, D. C., during October, 1897, for the examination of candidates for appointment to the Medical corps of the United States Army, to fill existing vacancies. Persons desiring to present themselves for examination by the Board will make application to Secretary of War, before September 1, 1897, for the necessary invitation, giving the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from which they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal acquaintance, from at least two reputable persons, as to his citizenship, character, and habits. The candidate must be between 22 and 29 years of age, and a graduate from a Regular Medical College, as evidence of which, his Diploma must be submitted to the Board. Successful candidates at the coming examination will be given a course of instruction at the next session of the Army Medical School, beginning November 1, 1897. Further information regarding the examinations may be obtained by addressing the Surgeon General, U. S. Army, Washington, D. C.

[Signed] GEO. M. STERNBERG,
Surgeon General, U. S. Army.

Physicians' Mutual Aid Society.

Dr. Frederick Horner, of Marshall, Va., has a right to congratulate himself that he has, after years of diligent effort, succeeded in securing such action by the American Medical Association as promises the establishment of a Medical Aid Society, for the purpose of raising a fund for the benefit of disabled physicians, and of the widows and orphans of physicians, members of the Section on Benevolence. Dr. Horner's report as Chairman of the Committee on Medical Aid Society, was submitted to the American Medical Association during its recent session in Philadelphia, and was referred to the Committee on Publications. As the result of the report, the following resolutions, presented by Dr. Henry O. Marcy, of Boston, were adopted:

"*Resolved*, That the suggestion of Dr. Fred. Horner, that steps be taken to organize a Relief Association for Disabled Physicians and the Widows and Orphans of Deceased Members, be approved.

"*Resolved*, That a committee, consisting of a member from each of the several State medical societies, be appointed by the chair to formulate a scheme for the organization of such a beneficial association within the American Medical Association, and that this committee report in detail at the next annual meeting.

"*Resolved*, That the President add to the committee the names of the secretaries of the State medical societies."

The New Iowa Medical Practice Law,

It is believed, will compel quackery of every kind to look elsewhere than in Iowa for its victims. Christian science, osteopathy, the magnetic fraud, the travelling quack—all will be required to move out of the State, or show good cause for tarrying. The only compromise in the law is an amendment providing that those who have practiced five consecutive years—three of which shall be in one locality in Iowa—may continue their practice. This lets in a few frauds, but the doors are tightly closed behind them. The backbone of the law provides that *a diploma* from a school recognized as in good standing, *admits only to examination* of the candidate. The law will practically enforce itself. It provides a penalty of not less than $300, and commitment until paid. Few will care to risk the consequences of violation. The district court only has jurisdiction. The *medical student clause* permits only those to practice under a preceptor who have had two courses of lectures in a recognized medical college.

Doctors of United States Invited to Stay Away from British Medical Association Meeting in Montreal.

The June issue of the *Cleveland Journal of Medicine* announces the local committee of arrangements for the Montreal meeting of the British Medical Association has gone so far as to send out letters begging the physicians of the United States to stay away from that meet-in August and September, on the pretext that so large an attendance (not more than two hundred or three hundred would have attended any way) would interfere seriously with the scientific program. "No doubt the somewhat palpable ill-breeding of the Montreal committee will be successful in keeping self-respecting American physicians in the confines of their own country next August. It is a pity that so good an opportunity for the brotherly intermingling of the British and American professions should be thus lost through Canadian lack of courtesy."

Dr. Geo. Ben. Johnston, Richmond, Va.,

Has recently had the honorary degree of LL.D. conferred upon him by a Northern college. Indeed, during the past year especially he has been the recipient of distinctions. Last fall, he was elected President of the Medical Society of Virginia; a few weeks later, he was made President of the Southern Surgical and Gynæcological Association; and during the recent session of the American Medical Association he delivered the address for the State medical societies on their accomplishments and purposes. He succeeded Dr. J. S. D. Cullen as Professor of Surgery in the Medical College of Virginia.

The Proposed Amalgamation of Bellevue Hospital Medical College and the University of the City of New York

Has fallen through. The differences between the two schools were found to be so many and of such a nature that the scheme for amalgamation proved impracticable. The Bellevue Hospital Medical College has started the erection of new buildings further up town at a cost of about $100,000. Advertisement is found in this issue.

The Virginia State Board of Health

Will hold its quarterly meeting at Hot Springs, Va., Wednesday, September 1st, 1897. Dr. Rawley W. Martin, Lynchburg, Va., President; Dr. Paulus A. Irving, Richmond, Va., Secretary. The State Board is just now interested in matters relating to the more healthful buildings of public schools, etc.

Illinois Cocaine Law.

The Illinois Legislature has recently enacted that it shall be unlawful for any person to sell or give away any preparation of cocaine except upon the prescription of a licensed physician or dentist, which prescription shall be filled only once. Of course, the wholesale of cocaine by a manufacturer or dealer is not prohibited if a label specifically setting forth the proportion of cocaine contained in any preparation is affixed to the bottle or package. Violators of the law, for the first offense, shall be fined not less than $10, nor more than $50; but for each subsequent offense, the fine shall not be less than $15, nor more than $200, or imprisonment in the county jail not exceeding thirty days, or either or both, in the discretion of the court.

Mississippi Valley Medical Association.

The next meeting of the Mississippi Valley Medical Association will be held in Louisville on October 5, 6, 7 and 8, 1897. All railroads will offer reduced rates. The President, Dr. Thos. Hunt Stucky, and the Chairman of the Committee of Arrangements, Dr. H. Horace Grant, promise that the meeting will be the most successful in the history of the Association, and this promise is warranted by the well known hospitality of Louisville and Kentucky doctors. Titles of papers should be sent to the Secretary, Dr. H. W. Loeb, 3559 Olive Street, St. Louis, Mo.

Carabana Water

Is undoubtedly about the best saline water to relieve constipation that we have ever tried. It acts thoroughly yet gently—rarely, if ever, causing griping or tenesmus. In preparing patients for operations for hæmorrhoids, ulcers of the rectum, etc., it has become routine practice for us to prescribe Carabana water rather than Epsom or other salts. Try it.

The Missouri Medical College, St. Louis,

Sustained very material damages by fire and water during the afternoon of May 20th.

Ether Danger Signals.

Hearn says that during the administration of ether for surgical anæsthesia, the most alarming danger signals are: (1), *sudden pallor of the face;* (2), *dilatation of the pupils*, and (3), *darkening of the blood.* When these symptoms present themselves—in fact, when any one of them—the anæsthetic should be at once withdrawn, and measures for resuscitation should be immediately instituted.

Obituary Record.

Dr. William F. Barr

Died at his home in Abingdon, Va., during the last week in June, 1897, aged about seventy years. He first attended medical lectures in the Medical Department of the University of Georgia, and was graduated a doctor of medicine from the Jefferson Medical College in 1855. Beside the title of M. D., he was also an A. M. and an LL. D. During the war, he held the position of Post-Surgeon, C. S. A., of Abingdon, Va. After the war, he located in that town, where he continued in practice till his death. While the youngest doctor in Washington county (in which Abingdon is located), he was the prime mover in the organization of the Medical Society of that county. He was a member of the *ante-bellum* Medical Society of Virginia, which went out of existence on the breaking out of the war between the States. When in 1869 and 1870 the effort (originating in Lynchburg, Va.,) was begun to organize the present Medical Society of Virginia, Dr. Barr gave great help in his section and signed the call for the convention of doctors to be held in November, 1870, in Richmond, for the purpose of organizing the Society; he was, however, prevented from attending the convention, and therefore his name does not appear in the roll of its founders, although he was ever an active worker in its ranks since 1871. He was twice a Vice President, 1871 and 1875. He was President of the Southwestern Virginia Medical Society. From 1870 until its establishment in 1884, he labored constantly with the legislators to secure the Medical Examining Board of Virginia. He served a term as Mayor, and then several years as President of the Council of Abingdon, as also President of the School Board of Trustees of Abingdon. He was an honorary member of several medical societies. He contributed papers to the *Georgia Medical Journal* and *Charleston* (S. C.,) *Medical Journal* during their lifetime, and to the *Virginia Medical Monthly* in its early years. Dr. Barr was especially noted for his fidelity to trusts committed to his care. He lived the life of a Christian, and died as he had lived—a consistent member of the Methodist Church of his town.

Dr. J. Lewis Smith

Died at his home, in New York city, June 9, 1897, aged sixty-nine years. Several years ago he was severely shocked by a runaway accident, and a few weeks ago he suffered from a cable car accident which kept him in bed—death finally resulting from cardiac exhaustion. He was born at Spafford, N. Y., October 15, 1827, graduated with academic honors from Yale in 1849, and graduated in medicine from the College of Physicians and Surgeons of New York in 1853. In 1869, he published the first American book on "Diseases of Children," which has long remained the text-book in many colleges. Beside being physician to a number of the hospitals of New York city, etc., he was for many years Professor of Diseases of Children in the Bellevue Hospital Medical College. He was a brother of the eminent surgeon and author, Dr. Stephen Smith. He was one among the first in America to adopt pediatrics as a specialty of practice and study, and the value of his contributions to that department of medicine is well recognized.

Dr. William Thompson Lusk

Died suddenly at his home in New York city from cerebral apoplexy, June 12, 1897. He was born in Connecticut in 1838. He graduated from Bellevue Hospital Medical College of New York in 1864. In 1868, he was chosen Professor of Physiology in Long Island College Hospital, where he remained until 1871. That year he also lectured on physiology at Harvard; the same year became editor of the *New York Medical Journal.* For years he was Professor of Obstetrics and Gynæcology in Bellevue Hospital Medical College, and was its President at the time of his death. His work on the "Science and Art of Midwifery" is the text-book in many colleges, and has been translated into many languages. He was "a forceful teacher, with few equals and no superiors." "He died at the zenith of a fame that was deservedly won by one of the most gifted members of the medical profession."

Spurious Coca Wines.

The *British Medical Journal*, January 23d and February 6th, speaks of the dangers of spurious coca wine. For the most part, the wine is of poor quality, but sweetened and highly fortified with rectified spirit. The amount of cocaine in these products is variable, and one does not know what doses of that drug he is ordering. The tonic and stimulant virtues of a real wine of coca—such as the well-known Vin Mariani—do not depend altogether upon the cocaine contained in it.

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CHRONIC PULMONARY TUBERCULOSIS.

Its Clinical Course and Symptomatology.

By KARL VON RUCK, B. S., M. D., Asheville, N. C.

The course and symptomatology of pulmonary tuberculosis is so variable that only general features can be considered. Apart from the particular constitution of the patient, this variability results chiefly from the mode of invasion and extension of the tubercular process, and from degenerations and complications which arise in the course of the disease locally and in distant organs.

There is no other disease in which the pathological changes may be found more complex and far-reaching than we often find them in the later stages of pulmonary tuberculosis, when the symptoms due to the purely tubercular lesions may be almost, if not entirely, obscured by those of attending complications.

The beginning of chronic tuberculosis of the lung is, as a rule, very obscure, and the slight symptoms which are present do not necessarily direct attention to the lung. I am inclined to believe that pulmonary tuberculosis is very frequently secondary to tuberculosis of the lymphatic system, in which the diagnosis is more obscure still, especially when the glands of the neck are not involved, and the affection is confined to structures not accessible to direct examination.

In the lungs, the eruption of tubercle is, however, attended with slight rises of temperature, and with a sense of general fatigue or malaise which we observe in all infectious diseases, the degree depending upon the extent of the eruption.

When confined to only a small portion of an apex of a lung, the symptoms may escape the attention of the patient, and that of the physician also, unless he is upon the alert for tubercular disease.

If consulted, he is only too apt to concur with the patient—that he is tired out from overwork and close confinement to his occupation, especially if this implies an indoor life; or the hot weather or a severe and tedious winter are held responsible; while in others, continued social duties and late hours, and various other causes, will be supposed to have induced the ailment.

In malarial districts, especially during the warm season, the symptoms are frequently attributed to malarial disease; but whatever may have been the theory as to its cause, if the tubercular process is a limited one and follows a favorable course, the symptoms pass away after a time under the advice and treatment which have been followed; and the apparent recovery confirms whatever view may have been adopted as to their cause.

The newly formed deposit may now continue latent for months or years, or for a lifetime; and the cases of healed tubercular lesions in the lungs found after death, in persons having died of other disease, and in whose clinical histories nothing could be elicited pointing to previous lung disease, must belong to this class.

Such evidence is being found with increasing frequency. Some observers claim to have obtained it in as high as 25 per cent. of all their autopsies, and should such really be the true state of affairs, and if we add finally also all those cases where, in a minute lymph channel or in glands, a few tubercles may scarcely have left any trace of their former existence, and are therefore very liable to be overlooked, we would have reason to consider as less extreme the position of those who claim that tubercular infection, with limited formation of tubercle somewhere in the organism, occurs in almost all people in civilized countries.

If this be true, there is at least this comfort left, that in these cases nature has affected a cure unaided and sufficient, so that the tubercular process was cut short in its incipiency; and it would justify the hope, that we may yet learn the avoidance of causes which favor the

progress to the more serious and formidable stages with which we are most familiar.

The primary, recent tubercle is scattered in an isolated form, or in small aggregations in the perfectly healthy lung parenchyma; but with the occurrence of the reactive, inflammatory changes, a slight catarrh occurs in the involved alveoli, owing to vascular congestion.

This catarrh may not be recognizable by auscultation unless in deep respiration, or on making the patient cough; and when the slow inflammatory changes have subsided, it may disappear entirely.

When the disease is not of the acute or general miliary form, the symptoms which more particularly attract attention to the lungs occur thus not so much with local eruption of tubercle, but with subsequent changes in the deposit, caused by renewed inflammation in the involved area, for which there may be no particular apparent cause; or they are induced by extension to it of bronchitis from cold and exposure, or in connection with other diseases.

The occurrence of a cold or an attack of grippe, under which the deposit becomes inflamed, is therefore most frequently assigned by the patient as the cause of his lung affection.

If the physician at such a time is fortunate enough to make a careful examination, and continues to observe the involved locality, he finds that, under the cold or attack of grippe, the catarrhal evidences are more particularly marked in one locality, that there they may persist longer in a circumscribed form, and that this locality is not fully resonant on percussion. After the acute symptoms of the bronchitis, or of the attack of grippe are passed, slight cough usually continues; and the temperature, which should have become normal, is persistently elevated a degree or so at some portions of the day, especially toward evening, while the patient's weight and strength are reduced.

Renewed active, inflammatory changes in the deposit of tubercle may also occur without any particular assignable cause, but a variety of influences of an unfavorable character can be presumed to be responsible, especially such as lead to congestion and irritation of the part, among which prolonged physical overexertion and inhalation of irritants, particularly of dust deserve especial mention.

Such attacks may be recovered from and may repeat themselves at longer or shorter intervals, without recognition of the structural changes which have occurred—being treated for colds, bronchitis, etc. In some cases, however, the symptoms continue after one of these inflammatory attacks and grow worse, with extension and persistence of the catarrhal pneumonic process, or with breaking down of caseous tubercles, leading to a more painstaking examination and to the recognition of the true state of affairs.

The cough, the fever, and the general malaise are then much more pronounced; and night sweats may occur until a cavity is formed; but when its contents are discharged, the acute symptoms again subside; a cough usually remains, and while for a time, and in connection with the discharge of the cavity, tubercle bacilli are found in the sputum, they are not longer found when the cavity has become dry. Often the sputum disappears entirely.

Many such cases pass through this stage also, under the impression of the patient and friends that the symptoms are the result of a bad and prolonged cold; and even medical men are frequently satisfied with the diagnosis of bronchitis, even without having made an examination of the chest or of the expectoration.

The latter does not show tubercle bacilli until the actual breaking down of tubercle and its outward discharge takes place. When the focus undergoing liquefaction is small, the characteristic sputum is perhaps present only for a few days or weeks; before and after, it is mucous or muco-purulent, and represents only the secretions of the accompanying bronchitis.

When the cavity continues to suppurate and to enlarge, and when under the catarrhal exudative inflammation the tendency to caseation of the tubercle, together with the entire exudate, continues, then there is no entire cessation of the fever and of other symptoms; at most an amelioration is noted in the patient's condition, but it is not lasting.

Soon after the beginning of liquefaction and of outward discharge of necrotic or caseous tubercle, we may note the involvement, in the tubercular process, of the opposite lung, or its extension locally, or both. The new area involved shows abnormal percussion, and auscultation changes, as a rule, within two or three months, and the process repeats itself in the new locality, more or less obscured by the symptoms of the disease in the first involved part.

If, with the first occurrence of destructive processes, we take pains in watching the adjacent area of normal lung tissue, and the apex of the opposite lung, we have the opportunity of observing the early changes which occur with the eruption of tubercle.

I have frequently had this opportunity when, after the discharge of a cavity on one side, I

could note the occurrence of very fine, delicate crepitations over a circumscribed area in the opposite apex.

In the beginning, they occur perhaps only once or twice on deep inspiration or with cough, when, thereafter, they cannot be produced again at the same sitting.

Gradually these crepitations become more distinct and more persistent; but all this time the percussion note and respiratory murmur may be perfectly normal.

The auscultatory phenomena, apart from these crepitations, after remaining normal for several weeks, show first slightly and later more pronounced prolongation of the expiratory murmur, and harshness of character becomes more and more evident; but under perfect quiet respiration, the change is still difficult to recognize. The crepitations frequently disappear at this time, the inspiration becomes now harsh and may be interrupted, and the prolonged harsh expiration is more distinct; gradually the percussion note appears less fully resonant.

With these changes, the apex of the lung retracts; and when the physical signs have become more distinctly developed, so that they are constant and easily observed, the affected apex stands at least one-fourth of an inch lower than it did originally.

The future changes in the new deposit are usually the same as in the opposite lung. The process may, however, stop here, but renewed inflammation and destructive changes are more likely to occur on either side; and the new deposit shows often a greater tendency to an unfavorable course.

In the progressive disease, from now on, the local evidences and the clinical symptoms become more and more complex. While in one locality there are pneumonic processes, in another there is evidence of softening, or the presence of moist or dry cavities; in another we have new deposits forming, and with all, more or less diffused bronchial catarrh; while perhaps, in still another locality, fibroid changes and retraction are evident.

Circumscribed pleurisy, over new or forming cavities, or in the lung portions below them, add further to the symptoms, in which the fever, cough and expectoration are more prominent; and functional disturbances in other organs, especially the heart and the digestive tract, are likely to appear.

Absorption of the products of suppuration and of substances from disintegrating caseous and necrotic material may stamp a more or less septic type on the course of the disease, which may become further complicated by pleural exudates, hæmorrhages, circumscribed or complete pneumo-thorax on the part of the lung, and by distant, tubercular eruptions and ulcerations, especially in the larynx and intestine; by degenerations in the liver, spleen and kidneys, and by gastro intestinal disturbances, with symptoms of absorption of products of decomposition and of abnormal fermentation from the alimentary canal.

These various pathological manifestations become often so involved that it is difficult or impossible to refer particular symptoms to their proper cause.

The further the patient drifts from the primary, simpler course, the less is an arrestment of the disease in prospect, until finally the case becomes absolutely hopeless.

If we now attempt to more particularly examine the symptoms and their relations to the local processes, we may first begin with—

The Fever.—This is the most constant symptom of the beginning disease, in which cough and expectoration may be entirely absent. With the eruption of tubercle, the degree of fever is proportionate to the involved area, and when the eruption is confined to one lobe or a portion of a lobe, it rarely exceeds 100° or 100$\frac{2}{5}$° F.

The elevation begins usually toward evening and the ascent is very gradual, but a hearty meal, or physical and mental exercise, may temporarily increase it, and may also cause it to begin earlier; the maximum may be reached in three or four hours, and the decline may be rapid or gradual; usually the temperature is again normal at bedtime.

In many cases, the whole period of elevation comes within a few hours, and the entire rise is less than a degree Fahrenheit. *This is the purely tubercular fever*; and it stops entirely when, after a period of from several weeks to as many months, the reactive, inflammatory changes subside.

Recurrences of the fever may depend on renewed inflammatory changes or congestions in the deposit. When congestion only is the cause, the rise may be only distinct over one or several days. They may, however, also depend upon new eruptions of tubercle, when a like course, as in the first instance, is observed.

With the advent of a bronchitis or grippe, with the occurrence of pleurisies, or with exudative pneumonic processes in the tubercular deposits, and in other portions of the lung, the febrile disturbances due to these affections are superadded.

When destructive changes begin to occur, absorption of the liquefied products of caseous

and necrotic tissues become the chief cause of the fever; and the purely tubercular fever—that is, the fever produced by the toxic products of the bacillus of Koch and by the reactive inflammation due to its presence—play a less significant part, unless new and extensive eruption of tubercle again occurs.

Thus, in the advanced stage, the character of the fever approaches more and more the hectic, and perhaps, more properly speaking, the septic type, with variations in degree according to the occurrence of complications, retention of secretions, etc.

When the destructive processes become limited, so that there is less absorption of pyrogenic products, the fever declines; but, inasmuch as in the advanced stages the destruction of tissue and suppuration in cavities within the involved area but seldom cease entirely, the temperature is but rarely found normal.

The general management and conduct of the patient also influence the degree of fever very materially in any stage or phase of the disease. On the whole, the course of the fever in the well established disease is as variable as are the pathological changes in the individual case.

Whether or not under the absorption of the products of the tubercle bacilli a more or less lasting antitoxic or antibacterial immunity is established in the subject of the disease, is an open question, but one rather fascinating in its consideration.

True it is, that the chronic disease progresses by intervals, especially in the earlier stages, during which the temperature can be entirely normal with recuperation in all directions.

These intervals are followed by new local and general manifestations of the degree of which the febrile movement is a very good index.

To explain these remissions and intermissions by the assumption of temporary immunity rather than by the causes heretofore considered, is, as I have said, very fascinating; and indeed, the theory finds some support in the results obtained from the use of bacterial products in the treatment of tuberculosis.

If it should prove something more than an ingenious theory, the fact still remains that in the advanced stages the fever is evidently influenced by other causes also, over which immunity against tubercle toxines, or against the specific bacilli themselves could not have the slightest influence.

Cough and expectoration are also constant symptoms of pulmonary tuberculosis, although this is only true when the accompanying symptomatic catarrh of the bronchi is well marked in the early stage, and after the disease has made certain advances.

In the incipient disease—that is, the eruption of tubercle with the reactive inflammatory changes which immediately follow, if the latter are of the productive variety—cough and expectoration may be entirely absent and remain so during the period of latency until under renewed inflammation, especially of the exudative catarrhal type, or with destruction of the deposit, the cough becomes established.

If the renewed inflammation subsides again without destructive changes occurring, the cough, too, may again disappear.

If the excitation of the latent disease has been caused by bronchitis or pneumonia, occurring in connection with colds and exposure or in the course of measles, whooping cough, typhoid fever, pleurisy, etc., the cough and expectoration are primarily due to the particular affection which excites the latent tubercular deposit into activity; but after their subsidence the tubercular area continues inflamed, and while the symptoms abate, they do not disappear entirely, but continue just as they would have done had the activity been initiated by changes originating within the tubercular area and without apparent external influence.

In the latter instance the cough in the beginning is slight, hacking and infrequent, and many patients barely notice its existence. Expectoration is rarely present from the start, but gradually the cough increases in severity and frequency; catarrhal sputum appears after several weeks or months, until finally the local irritation is again allayed by subsidence of the activity, or the symptoms are diminished by outward evacuation of liquefied caseous matter or by its absorption.

If a cavity has been formed the sputum becomes heavier, more purulent, contains frequently caseous particles, elastic fibres, and the specific germs are always found on painstaking microscopical examination.

Cough, more or less severe, continues, and in most cases it never ceases entirely, except, perhaps, for short periods of time.

This is particularly true in cases where the catarrhal-exudative process predominates. In such cases all the symptoms are more severe, and cavities, when formed, are more apt to enlarge and to continue to suppurate.

This difference is due to the fact that in the catarrhal-exudative process, the tubercles and the adjacent lung tissue, together with the ex-

udate, undergo caseation in mass; there is not the well defined demarcation and limitation which we find when a larger tubercle, more or less encapsuled by fibroid tissue liquefies, and makes its discharge outward through a bronchus.

In the latter instance, the cavity is relatively small, tends to become clean and dry soon after its evacuation, and with the cessation of the discharge the cough and expectoration, too, may stop.

The sputum from cavities is frequently characteristic by its freedom from air, by its thick, yellowish appearance, and by the presence of caseous particles visible to the naked eye; it is globular, often eroded on the edges, and occasionally calcareous particles or concretions are found in it; it may be intimately mixed with blood derived from ruptured capillaries within the cavity.

In most cases the cough is not in excess of what is necessary for the discharge of the expectoration. When the larynx and trachea or the bronchi become the seat of tubercular ulceration or of erosions from acrid sputum, the cough becomes at times extremely harassing, and may occur in the form of severe and exhausting paroxysms.

The cough is also aggravated, when the tubercular process is chiefly peri-bronchial, and by pressure of enlarged bronchial and mediastinal glands, and of accumulating secretions in closed cavities by local congestions, etc.

Under all circumstances there appears the greatest difference as to the severity of cough in different patients, and often without any sufficient reason that we can assign, we see patients who scarcely cough at all, the sputum apparently arriving in the trachea only to be hawked up with very little effort, while in others, distressing cough is the chief cause of their complaint.

Some authors seem to think that the degree of irritability of the nerve centres accounts for these differences, and I, too, have found that in many instances a resolute resistance to the impulse on the part of the patient is effectual, in a measure, to control the milder forms of cough. But the extreme and paroxysmal attacks, I presume to be due rather to involvement of nerve trunks and their branches, either as a distinct neuritis or from pressure. Of the influence of the latter, I have frequently had occasion to satisfy myself, when after copious discharge from occluded cavities the paroxysms ceased, and the cough thereafter was not disproportionate to the amount of expectoration.

Older suppurating cavities furnish more and more distinctly purulent sputum which is entirely formless, and appears as a sediment almost like pure pus in the bottom of the expectoration vessel containing water.

Decomposition of the sputum may also occur under prolonged retention, especially toward the close of life, when the patient's strength becomes seriously diminished and the expiratory muscles are greatly weakened. The sputum has then a sickening, sour odor, becomes dirty gray or greenish; and some patients are sensible of the bad odor and taste which sickens and nauseates them even to the degree of vomiting.

Apart from the local disease of the lung and upper air passages, the cough is frequently increased by fermentative processes with formation of gas in the stomach and bowel, and by the consequent upward pressure of the diaphragm. Patients suffering from such complications, frequently cough immoderately until the discharge of the gas is accomplished.

Bloody expectoration and hæmorrhage may occur at any period of the disease, and hæmoptysis is at times the first symptom attracting attention to the local affection.

When it is observed in apparent perfect health and without any previous cough, the patient and often the attending physician are exceedingly reluctant to believe that the discharge of blood is due to pathological changes in the lung; and this position of the physician may be further strengthened if the examination of the lung gives a negative result.

Even when the general health is impaired, as in anæmic females in whom the menstrual functions have become deranged, irregular or suppressed, the diagnosis of vicarious function is still finding unjustifiable favor in some professional minds; and the same is perhaps the case in the hæmorrhoidal affections in both sexes, when bleeding of the hæmorrhoids has not occurred with accustomed frequency.

The initial pulmonary hæmorrhage may subside and the health may remain good for months and years; it may recur at a later period, and again no serious consequences may be experienced. Such instances are, however, exceptional, and they do not justify the expectation that in the individual case the same will happen. On the contrary, the initial hæmorrhage is usually followed by more distinct symptoms of tubercular disease in the near future; and if not present at the time, physical symptoms become soon manifest.

In the light of the obscure pathological changes and their latent character in the

first eruption of tubercle heretofore mentioned it is easily conceivable how, in a very limited area, perhaps only in a portion of a lobule, the tubercular formation may have caseated and broken down, or the walls of a smaller vessel may have become involved in the tubercular disease and have ruptured on that account. While under such circumstances we cannot demonstrate just what change has taken place, the fact remains that under normal conditions and without structural changes in or about the vessel, rupture and hæmorrhage does not occur.

Such early hæmorrhages are, as a rule, quite moderate, and amount to from one or several mouthfuls to four or six ounces. They may, however, be repeated on the same or following days by dislodgement of the clot through coughing and also by the recurrence of the normal blood pressure, which during the discharge of blood may have become diminished from the loss itself, or as more frequently happens, from the weak heart action due to deranged function under the moral depression and fear induced by the accident.

As the disease advances, hæmorrhage is more frequent and often more copious, amounting in some cases to several pints at a time. It is especially liable to occur with rapid extension of the destructive process and with pneumonic complications; and the hæmorrhage may in turn give rise to exudative pneumonia, the occurrence of which is one of the chief dangers from hæmorrhage.

Slighter hæmorrhages in which the blood is quickly expectorated are not often followed by this form of inflamination. Only in the instances where the ruptured vessel is comparatively large, and the hæmorrhage is so copious that some of the blood is aspirated into other parts of the lungs, is this complication more frequent.

As such hæmorrhages have their origin in cavities, especially in such which are newly formed, are inflamed, or are suppurating, the cavity-contents are forced out with the blood by the violent cough; and the blood, if aspirated into the bronchioles and alveoli of pervious lung portions, becomes the carrier of infectious secretions, which latter cause the inflammation.

Hæmorrhage is rarely so copious as to cause immediate death from suffocation—much less from the loss of blood directly; and though profuse for a few seconds or minutes, it, as a rule, moderates quickly.

In my experience, I have seen an immediately fatal result only three times; neither have I seen very many hæmorrhages,* but a considerable number of those observed by me were certainly seriously detrimental in their ultimate effect.

The early or initial hæmorrhages are rarely seen by physicians at health resorts or by specialists in cities. I can appreciate that such hæmorrhages being, as a rule, slight, and occurring at a time when the patient's physical condition is still good, are not so detrimental, as they become later on, when frequently the reverse is the case.

In my clinical material, the histories of the patients, on coming under observation, show hæmorrhages to have occurred in 21 per cent. of all cases; and the frequency corresponds with the usual statistics, which vary between 20 and 30 per cent.

In 70 per cent. of my cases who suffered from hæmorrhage, it occurred in the ordinary course of the disease without assignable exciting cause. At the time of the hæmorrhage, 80 per cent. of the patients were improving, 15 per cent. were stationary, and 5 per cent. were losing ground.

The future course of the disease was permanently and adversely influenced by the hæmorrhage in nearly one-third of all cases which were improving or stationary, chiefly the cause of the occurrence of pneumonia.

Thirty per cent. of the hæmorrhages occurred under the existence of pneumonic and acute destructive processes; therefore, in patients pursuing an unfavorable course, two of these proved fatal immediately; in another, the bleeding cavity ruptured with formation of pneumo-hæmothorax fatal on the second day. The present exudative inflammatory process extended in the same lung twice; to the opposite lung, three times, and occurred first after the hæmorrhage in two other cases. All proved fatal within a few weeks. Acute, miliary tuberculosis followed in one case, and the condition of the patient became markedly more serious in a number of others; the percentage of distinctly detrimental influence of this class being a little over sixty.

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* Inasmuch as hæmorrhages are admitted, on all sides, to be more frequent in the established and advancing disease, the fact that I have observed hæmorrhage in less than four per cent. of all patients under my care, points to influences which may be favored or avoided, and justifies the conclusion that the patient's mode of life, conduct and environment, and his general management and control, has an important influence in their occurrence. This conclusion seems substantiated by the statistics of all special institutions for tubercular patients which show an exceedingly small number of hæmorrhages as compared with statistics from general hospitals and private practice.

This experience would justify the conclusion that, with the exception of the slighter forms in the initial and very early stage, pulmonary hæmorrhage occurring under careful general management, under which exciting causes, such as over-exertion and exposure, are strictly guarded against, is a serious occurrence, and has an adverse influence upon the future course of the disease in between 40 to 50 per cent. Inasmuch as such a consequence may follow hæmorrhage in any stage and phase of the disease, it should never be looked upon with indifference, but must receive most painstaking attention in its prevention and management.

Bloody expectoration may, at times, precede the more free discharge of blood, for several days; but, as a rule, the hæmorrhage is abrupt and unexpected. Some patients who have had previous experience claim to have observed a sweetish taste in the mouth for some hours before the hæmorrhage, and think they can foretell the approaching accident.

Others, and with more reason, complain of a sense of pressure and suffocation for some days before they bleed, and, with the hæmorrhage, this symptom, which probably is the result of local congestion, is frequently relieved.

I have, however, so frequently found such patients mistaken in their supposed premonition, that not much reliance could be placed upon such symptoms.

The expectoration may be streaked with blood, or the blood may be more intimately mixed with it, giving various shades of color indicating its presence.

Under severe cough, minute particles of blood or slight, distinct, delicate streaks may be the result of the temporary congestion of the bronchial mucous membrane. They have no particular significance except to cause some patients to become exceedingly nervous about it.

More thorough admixture of blood occurs with the acute pneumonic processes; and typical rusty sputum, as we see it in croupous pneumonia, may sometimes be coughed up.

The dark brown or chocolate-colored sputa come, as a rule, from inflamed cavities, where the blood becomes intimately mixed with the purulent secretion, and may be followed by more free hæmorrhage.

The sputum is also liable to be tinged with blood when a cavity first opens and discharges outward; and the new cavity is particularly liable to discharge blood either from capillaries or larger vessels in the interior. As the cavities become multiple, and with the advancing disease and its complications, the exact location of the source of the blood becomes more difficult, and often impossible.

The general rule, however, holds good, that the advent of sufficient blood to be visible in the sputum betokens either considerable congestion of the mucous membrane, or acute inflammation of lung tissues; and that the more distinctly bloody sputum we have reason to consider as occurring most frequently with extending destructive or ulcerative processes and with inflamed cavity.

The quantity of the ordinary expectoration in the established disease varies with the activity and subsidence of destructive changes and the inflammation of cavities, and with the extent and degree of the symptomatic bronchial catarrh.

In the early stages it is moderate, varying from a few mouthfuls to several ounces per day, and is derived from the mucous membrane of the bronchi and trachea, containing nothing characteristic until some tubercular tissue breaks down, and an open, discharging surface is formed. Elastic fibres and tubercle bacilli may then be found to be more or less persistent and frequent.

If the open, tubercular surface heals or ceases to secrete, the elastic fibres and bacilli disappear entirely. Later, when cavities and ulcerations are multiple, the sources of the elastic tissue and of the tubercle bacilli are more numerous and their presence is more constant.

In the stage of arrested progress, the sputum diminishes, elastic fibres are found only occasionally and with difficulty, or not at all; while tubercle bacilli continue to be present, until all cavities are dry and all open surfaces are healed.

The tubercle bacilli are particularly liable to be found in minute, yellowish, caseous particles, which may be readily observed in most specimens of sputum, which come from open, tubercular surfaces, those who frequently examine sputum for diagnostic purposes pick out these caseous particles without difficulty.

Most sputa, especially in the well-established disease, contain also epithelium, blood cells, leucocytes, and other micro-organisms, especially staphylococci, streptococci, and the diplococci of Frankel; but their presence may be observed without evidence of sepsis.

Retention of cavernous sputum from obstruction of the outlet of the cavity may occur, and may give rise to a sense of local pressure or fullness, and to considerable increase of the fever. If only one cavity is present, the pre-

vious, purulent, or muco purulent sputum may become mucous and frothy, for several days or even longer, when suddenly a larger amount of the cavernous sputum is again discharged.

Such marked variations in quantity and character of sputum are indicative of the presence of cavity, even though physical diagnosis has failed to demonstrate its presence.

Expectoration is, as a rule, most copious in the morning, and occurs with the first change in position the patient makes on waking. The cough and expectoration then continue, until the bronchi are cleared of the secretions which have accumulated during the diminished reflex irritability of sleep.

Expectoration also increases during and after meals, particularly when hot drinks are taken, and in some cases on assuming the recumbent position after the patient has been up for the greater part of the day. Patients who have large and copiously secreting cavities are often troubled with continuous cough and expectoration, unless they assume a proper position, under which the cavity does not discharge or overflow.

There is no doubt that the profuse secretions and discharge from the lungs in the advancing disease are a serious drain upon the patient's vitality and nutrition, which is further increased if the cough is severe or frequent, and by the disturbance of the rest of the patient. Since more or less of the secretions are undoubtedly absorbed, they are often the chief source of fever, as I have already pointed out, when its cause was considered.

Toward the close of life, the cough and amount of expectoration diminish or cease entirely in patients whose exhaustion has become extreme. This is, however, not due to the muscular weakness, but to diminished, reflex irritability, which can only account for the subsidence of the cough while the secretions accumulate within the lung.

[TO BE CONTINUED.]

For Varicose Ulcers.

Simonelli, after cleansing the ulcer, dusts on this powder:

℞.—Sodium chloride .....10 parts.
Menthol ....1 part. Mix.

Even atonic ulcers promptly begin to granulate under this treatment; then they may be treated with cauterization, skin-grafting, etc.—*N. Amer. Prac.*, March, 1897.

AFTER-TREATMENT OF CATARACT, WITH ESPECIAL REFERENCE TO THE USE OF GERMICIDES.*

By JOSEPH A. WHITE, A. M., M. D., Richmond, Va.,

Professor of Diseases of the Eye in the University College of Medicine, Richmond, Va.

The after-treatment of cataract depends, to some extent, upon the method and immediate result of the operation performed—whether simple extraction, or with an iridectomy; whether smooth and satisfactory or attended by accidents. Whatever the condition of the eye, when the surgical procedure is at an end, we have only one object in view in the after-treatment—the prevention of such complications during the healing process as will render a successful result doubtful. Of these complications, the most important are infection of the wound and prolapse of the iris. Of minor consideration are corneal opacity from undue trituration in the operation, or from slow healing of the wound, and the reappearance of considerable cortical substance after an apparently perfectly accomplished toilet. These latter are not always preventable, and generally take care of themselves. That rare complication, secondary hæmorrhage, may be from the retina or from the iris; the former is usually destructive to the eye; the latter, occurring occasionally after extraction with iridectomy, is annoying, and delays rather than prevents a good result. Neither is preventable, unless foreseen or expected.

Now, how are we to prevent the serious complications first mentioned? More care is required after simple extraction than after extraction with iridectomy, and whilst all ophthalmic surgeons do both operations, most operators, unless there are decided indications to the contrary, start in to do a simple extraction, although it occasionally happens they are forced to do an iridectomy.

An operation may, from the making of the corneal section to the completion of the toilet, proceed without trouble, leaving a clean, well-adjusted wound and a clear round pupil. Where the instruments and the hands of the operator and the field of the operation were thoroughly clean or aseptic prior to and during the performance of the latter, little or no after-treatment is required, as such cases almost

*One of a series of papers on Cataract, read by appointment before the Ophthalmological Section of the American Medical Association in Philadelphia, May, 1897.

invariably do well and make a rapid recovery. The necessary precautions to prevent serious complications must, however, be observed, and these are to *keep the eye at rest, to prevent injury to it and to preserve the already established aseptic condition of it and its adnexa.*

Whatever method may be adopted to this end in the first dressing—and here, as elsewhere in surgery, opinions differ as to detail—I am satisfied that the most successful operators have recognized that the eye will get along best with the least possible interference, during the ten days immediately following the operation.

The best way to keep the eye at rest is by a properly adjusted packing of sterilized lint, gauze, or absorbent cotton over both eyes, held in place by a bandage of strips of plaster, and by confining the patient to bed. Whether the lids are first closed by a strip of isinglass plaster, gold beater's skin, or other substitute, is a matter of individual selection or taste.

The best way to prevent injury to the eye is by a protective mask or by hand-cuffing the patient—the former, in my opinion, to be preferred. Some operators have deviated widely from these recognized precautions, inasmuch as they bandage only the operated eye, use no protection against injury, or allow the patient to sit up or move about the room. Others even treat them as out-door patients, to come and go like other clinical cases. Statistics, however, do not demonstrate the wisdom of these procedures when compared with the results obtained by taking the precautions dictated by common prudence in the after-treatment of other surgical operations.

The best way to preserve the already established aseptic condition of the eye, if such a condition has been established, is a mooted question. In the consideration of this proposition, I wrote a circular letter to about fifty ophthalmologists representing every section of the Union. A large majority of them very courteously responded. My questions covered the whole ground of cataract extraction, from the preparation of the patient to the completion of the after-treatment, in regard to asepsis or antisepsis. Some denied the possibility of rendering the conjunctival sac aseptic if it was not already naturally so, and hence used no aseptic or antiseptic treatment before or after extraction, and did not apply antiseptic dressings, although they recognized the advantages of sterilizing instruments, and of thorough cleanliness before and after the operation; either sublimate or iodoform gauze or absorbent cotton having previously prepared the eye by cleansing with aseptic or antiseptic solutions. More used aseptic than antiseptic solutions.

The aseptic applications were various according to the practice of the operator; physiological salt solution, borax, boracic acid, calomel (?), iodoform, formalid, formaldehyde, Panas' solution, and sublimate 1 to 8000 and 1 to 10000. The antiseptic applications were sublimate in solution or ointment 1 to 5000, 1 to 4000, 1 to 3000. I call these antiseptic because bichloride of mercury in this strength is a germicide. Either it destroys the germ or renders it inocuous by an albuminoid deposit about it in a short time. Even the germ of anthrax is rendered powerless for evil. If destruction of germs is to be secured, a little chloride of sodium should be added to the preparation, as it is said to prevent the albuminoid deposit.

The whole question of the use of germicides in the preparation of and the after-treatment of cataract cases depends mainly on what may be the usual condition of the conjunctival sac. Is it or is it not normally aseptic or free from germs that might cause infection? If it is, antiseptics or germicides are uncalled for. If not (and most bacteriologists say it is not sterile), they should be as valuable here as elsewhere in surgery, unless the contention of some that the conjunctiva cannot be rendered aseptic is admitted. If it is not aseptic, I am satisfied that simple flushing with an antiseptic solution will not sterilize it; but if a germicidal preparation can be kept in contact with its surface for a sufficient length of time, why will it not make it as sterile as the skin with like preparations. Working on this assumption, I for some years have been in the habit of using what I call sterilized vaseline before and after the operation, because aqueous solutions cannot be kept in contact with the mucous membrane long enough. The vaseline is boiled ten minutes, and to each ounce is added one-sixth grain of bichloride of mercury and an equal quantity of chloride of sodium, well rubbed in whilst it is cooling, making a sublimate preparation 1 to 3000.

Twenty-four hours prior to operation, the eye is thoroughly washed with a sublimate solution 1 to 5000, filled with sterilized vaseline and sealed with antiseptic dressing. This is removed on the operating table just before the extraction. During the operation, the eye is flushed with a solution of bichloride 1 to 5000, and as soon as it is completed, it is filled with sterilized vaseline, the lids closed by a pledget of absorbent cotton or gauze, wet with sublimate solution, and the orbit filled up with dry

sterilized cotton, held in place by adhesive strips. The unoperated eye is closed in the same way, but more firmly. Over this dressing cotton is laid loosely, and held in place by the ring mask. The patient is then placed in bed, kept perfectly quiet for forty-eight hours, after which time he is allowed to sit up in bed. The third or fourth day he can sit in an easy chair. On the third or fourth day, as the case may be, I remove the dressings, examine the eye, and, if the anterior chamber is re-established, I insert sterilized vaseline with atropia sulp. added, gr. iv to ℥i; otherwise, without the atropia. This is done to prevent any synechiæ from the iritis, which almost invariably follows cataract extraction. It may be so mild as to escape notice, or it may be sufficiently severe to cause adhesions and more or less discomfort. It usually develops from the third to the fifth day. If the wound is healed, the unoperated eye is released; otherwise not. The eye is then redressed in the manner given above, and usually not opened again until the eighth day. Whilst I do not usually examine the eye until the third or fourth day, I sometimes remove the dressing and readjust it on the first or second day after the operation to make the patient more comfortable, and occasionally circumstances may call for an examination of the eye itself earlier than the third or fourth day; but this is rare. The only reason for this is that a prolapse of the iris may have occurred; but, in my opinion, this manifests itself in some discomfort, a sensation of grit, etc.

Whatever merit the above method may have depends, as I have said, upon the solution of the above question in relation to the conjunctiva, but I may say, in support of its efficiency, that in several hundred operations I have had but *one case* of infection of the wound, and this occurred on the seventh day. I attributed it to the well-meant, but unfortunate, bathing of the patient's eye by his wife, who in all probability introduced the germ in this way. I succeeded in limiting the suppuration to the edge of the wound, but secondary mild iridocyclitis resulted in phthisis. This would not have occurred if he had been in a hospital. Objections have been made to the above procedure on the ground that it produces irritation dangerous to the eye. Whilst slight hyperæmia of the eye sometimes is manifested, my experience in hundreds of cases has demonstrated that it does no harm, and therefore this objection is hardly to be considered.

In regard to the subsequent dressing of the eye, I find among my correspondents a number who change the dressing every day and wash the lids in some aseptic or antiseptic solution, and one who changed it twice daily, flushing it each time with a sublimate solution 1 to 5000. Others change the dressings more seldom. Inspection of the eye is done by some every day, others every two or three days, and by others not at all during the first week. I mention these customs to show that more than one road leads to Rome.

The concensus of opinion gathered by my correspondence is in favor of some form of aseptic or antiseptic dressing in the after-treatment, although some claim that it is useless, as secondary infection cannot thereby be prevented, whilst they admit the value of asepsis to ward off infection.

It may be useless labor, but it is labor wasted in the right direction, provided no harm comes of it.

If infection presents itself after such precautions, the operator has no cause to reproach himself. Occasionally, I am confident, no method of asepsis or antisepsis will prevent it, even barring cases of tear sac trouble. I refer to those rare cases where the trouble comes from within, where a focus of infection exists at a distant point, such as a chronic ulcer, or manifestations of furuncles. Such cases are dangerous to operate on, notwithstanding the absence of constitutional symptoms of septicæmia or pyæmia.

In the treatment of complications, I may add a word or two. Infection of the wound is practically disastrous to the eye, resulting either in suppuration of the cornea or in secondary irido-cyclitis with phthisis. I know of no sure way of preventing a bad result, although we may sometimes succeed. The actual cautery, as in deep ulcer of the cornea, is the surest way to sterilize the infected region, but may itself set up the uveal trouble; tinct. iodine, pyoktanin, and nitrate of silver are used also to arrest suppuration.

In regard to prolapse of the iris, if it occurs immediately following the operation, I think it is better to draw out the iris and do a regular iridectomy, because whilst it might remain in place if returned with a spatula, it more commonly prolapses again and becomes a source of anxiety. But a prolapse which is discovered only when the wound has begun to heal should, in my experience, be let alone. Nature is a great restorer, and I have been astonished at times at what she will do with a prolapsed iris that some years ago made me very uneasy.

I have seen a large prolapse along nearly the whole extent of the wound gradually disap-

pear, leaving a smooth cicatrix, and with no other evidence of its existence than a slight drawing upwards of the pupil. My only treatment was hot sterilized applications, twice or three times daily for fifteen or twenty minutes, and protective bandage. The same treatment I use for iritis, corneal opacities, slow healing of the wound, and cortical masses in the pupil. I remove the dressings, and, without opening the eye, apply a pledget of absorbent cotton saturated with a sublimate solution 1 to 5000. Then, with an ordinary pipette, I drop the hot sterilized water on the cotton. By dropping it fast or slow, the heat can be maintained to the point of physical endurance for the whole period of fifteen or twenty minutes, after which the antiseptic dressing is reapplied. Atropia in sterilized vaseline is applied in all these cases, except in prolapsed iris, and in that also when the prolapse has flattened. The value of myotics in prolapse of the iris I have never been able to satisfactorily determine. Eserine, if used strong enough, is apt to set up iritis, and I have discarded it, except in a very weak solution, to which pilocarpine is added to increase its efficiency. This I make use of in some cases, but have found that others get along about as well when I neglect to do so.

200 *East Franklin.*

THE ABSORPTION BY WATER OF FREE AND ALBUMINOID AMMONIA UNDER VARIOUS CONDITIONS.

By N. KNIGHT, Ph. D., Ashland, Va., Professor of Chemistry, Randolph-Macon College, Va., and W. M. BLANCHARD, A. M.

The water used in these investigations was obtained from a spring in the vicinity of Ashland, Va., known as "Rock Spring." Various analyses showed a constancy of the mineral constituents of the water. The small quantity of free and albuminoid ammonia it contains was determined from time to time and deducted from the amounts obtained in the following experiments. The ammonias were determined by a slight modification of the Waukyln-Nessler process. 200 c. c. was usually distilled for a determination and 50 c. c. nesslerized. This made it possible to repeat a test easily when it seemed desirable to do so.

It should be understood that the ammonium nitrate and nitrite which are present in small quantities in the atmosphere are included in albuminoid ammonia. The figures given express in every case the number of parts in a million.

EXPERIMENTAL PART.

Five hundred c. c. of the water was placed in a porcelain evaporating dish of two litres capacity. The dish was thoroughly cleaned each time before using. The water was allowed to stand in a room occupied by two students as a study in the day time and sleeping room at night. The room was well ventilated by a wood fire and by open windows. After thirty-nine hours, 500 c. c. more of the water was added to the dish to supply loss by evaporation. The whole was then allowed to stand twenty-one hours longer. Making the necessary corrections for the ammonia in the water, it contained—

Free ammonia .... .264
Albuminoid ammonia..... .400

A litre of the water was placed in a room occupied by two students as a sleeping apartment. The water remained six hours, from 11 P. M. to 5 A. M. The night was cool and the room was tightly closed. It contained—

Free ammonia .... .032
Albuminoid ammonia..... .048

A litre of the water was placed in a fairly well-ventilated room occupied by a student sick with measles. After standing twenty hours, the water contained—

Free ammonia .... .120
Albuminoid ammonia..... .048

A litre of the water remained during the night in a ventilated sleeping room of a private residence in the town. The room was occupied by two grown persons and a child. In the morning, the water contained—

Free ammonia ..... .120
Albuminoid ammonia..... .102

Five hundred c. c. of the water was kept for ten hours in an unventilated clothes press. It contained—

Free ammonia ..... .447
Albuminoid ammonia..... .062

Five hundred c. c. of the water was placed in the chemical laboratory and allowed to remain three hours. No ammonia was used by the students during this time. It contained—

Free ammonia ..... .624
Albuminoid ammonia..... .086

Five hundred c. c. of the water was left five and a half hours in the chemical lecture room. A class of forty occupied the room during one hour of the time. It contained—

Free ammonia ..... .088
Albuminoid ammonia.. ..... .038

A litre of the water was allowed to remain

seventeen hours in the biological laboratory of the college. It contained—

Free ammonia..... .200
Albuminoid ammonia..... .102

Five hundred c. c. of the water remained in the Latin lecture room of the college six and a half hours, during which there were recitations in progress about half the time. It contained—

Free ammonia..... .024
Albuminoid ammonia..... .030

A litre of the water was placed early Sunday morning in the Ashland Methodist Church, and left for twenty-four hours. During the time, two services were held in the church, at each of which a hundred and twenty-five persons were present. The day was warm, and the church was well ventilated by open windows. The water contained—

Free ammonia..... .148
Albuminoid ammonia..... .124

On the following Sunday, the foregoing experiment was repeated. The conditions were similar, except the day was cool and the windows were closed. The water contained—

Free ammonia..... .056
Albuminoid ammonia..... .142

A litre of the water was allowed to remain twenty-four hours, beginning Sunday morning, in the Shiloh Baptist Church (colored) of Ashland. The building was poorly ventilated. Two services were held during the time, at each of which about fifty persons were present. The water contained—

Free ammonia..... .056
Albuminoid ammonia..... .166

A litre of the water was placed in a urinal at 8:30 P. M. After nine hours, it contained—

Free ammonia ..... .744
Albuminoid ammonia..... .048

Two litres of the water was placed in the large water-closet of the college at 10 A. M. After half an hour, 500 c. c. was tested. It contained—

Free ammonia ..... .056
Albuminoid ammonia..... .072

After standing an hour, another 500 c. c. of the water mentioned in the foregoing was withdrawn and tested. It contained—

Free ammonia..... .088
Albuminoid ammonia..... .032

After two hours, another 500 c. c. contained—

Free ammonia ..... .264
Albuminoid ammonia..... .032

After three hours, another portion contained—

Free ammonia..... .356
Albuminoid ammonia..... .064

On another occasion, 500 c. c. was allowed to stand fifteen minutes in the same place. It contained—

Free ammonia..... .136
Albuminoid ammonia..... .048

Five hundred c. c., after five minutes, contained—

Free ammonia ..... .064
Albuminoid ammonia..... .062

Five hundred c. c., after one minute, contained—

Free ammonia ..... .048
Albuminoid ammonia..... .000

To compare the amount absorbed by water standing in a shallow vessel, like an evaporating dish, with the absorption in a narrow-necked chemical flask, the following experiments were made:

1. 500 c. c. of the water was placed in a chemical flask, whose neck was one and a half inches in diameter, and left for half an hour in the water-closet of the college. It contained—

   Free ammonia..... .064
   Albuminoid ammonia..... .062

2. After four hours, under similar conditions, it contained—

   Free ammonia..... .080
   Albuminoid ammonia..... .078

3. 500 c. c. of the water was placed in a well-ventilated sleeping room occupied by two students. After eight hours, it contained—

   Free ammonia..... .000
   Albuminoid ammonia..... .006

Five hundred c. c. of the water, in an evaporating dish, was allowed to remain ten hours in a cow stable. It contained—

Free ammonia.....1.784
Albuminoid ammonia..... .235

Five hundred c. c. of the water remained six hours in a horse shed. It contained—

Free ammonia..... .593
Albuminoid ammonia..... .407

The absorption of ammonia from the air at different elevations:

A litre of the water, in the evaporating dish, was placed on the ground on the college campus. A similar portion was placed above this on a tower sixty feet high. Both remained ten hours. The former contained—

Free ammonia..... .080
Albuminoid ammonia..... .182

The latter contained—

Free ammonia..... .068
Albuminoid ammonia..... .102

This experiment was made on April 28.

May 17. Placed 500 c. c. of the water on the college campus at 9 P. M. and the same quantity on the tower. After ten hours, the former contained—

Free ammonia..... .312
Albuminoid ammonia..... .838

And the latter—

Free ammonia..... .040
Albuminoid ammonia..... .222

The foregoing was repeated on May 18, the temperature of the air having increased. The water on the ground contained—

Free ammonia..... .072
Albuminoid ammonia..... .222

The water on the tower contained—

Free ammonia..... .072
Albuminoid ammonia..... .086

On *May* 19, the foregoing experiments were repeated. The water on the ground contained—

Free ammonia..... .176
Albuminoid ammonia..... .292

The water on the tower contained—

Free ammonia..... .048
Albuminoid ammonia..... .092

May 20. Water placed as in the foregoing on the ground contained—

Free ammonia..... .064
Albuminoid ammonia..... .070

On a cloudy day, 500 c. c. of the water remained five hours (12 M. to 5 P. M.) on the tower. It contained—

Free ammonia..... .160
Albuminoid ammonia..... .118

May 27. A sunny day. 500 c. c. of the water remained on the campus, under the shade of the trees, from 7 A. M. until 5 P. M. It contained—

Free ammonia..... .232
Albuminoid ammonia..... .686

The same quantity on the tower in the sunlight contained—

Free ammonia..... .008
Albuminoid ammonia..... .038

Ammonia in rain-water:

Previously to May 12th, there had been almost no rainfall for several weeks. On the night of the 12th, there were frequent showers. At five o'clock on the morning of the 13th, the evaporating dishes were placed in the open air. There was a gentle rainfall during the day. 500 c. c. of water had collected at 1 P. M. It contained—

Free ammonia..... .128
Albuminoid ammonia..... .230

At 3:15 P. M., another 500 c. c. had collected. It contained—

Free ammonia..... .088
Albuminoid ammonia..... .252

Later: After clear weather for several days, there were heavy rains. 500 c. c. of the water caught at the beginning of the shower contained—

Free ammonia..... .160
Albuminoid ammonia..... .108

After it had rained for some time, 500 c. c. showed—

Free ammonia..... .144
Albuminoid ammonia..... .078

These conclusions, arrived at also by other experimenters, seem justified from the foregoing work. The ammonias may be regarded as a type of the impurities present in the air.

1. The purity of the air increases with the altitude.
2. The sunlight is a purifier of the air.
3. The amount of absorption depends upon the surface exposed.
4. The great absorbing power of water and its purifying effects upon the air of a room.
5. The beneficial effects of lakes, rivers, and other large bodies of water in purifying the air of the surrounding country.

It is proposed to investigate the absorbing power of milk and other liquids, to compare them with the absorbing power of water.

Antikamnia in Nervous Disorders Characterized by Melancholia.

The "*Reference Book of Practical Therapeutics*," by Frank P. Foster, M. D., recently issued, contains an article which expresses the concensus of medical opinion: "Antikamnia is an American preparation that has come into extensive use as an analgetic and antipyretic." "As an antipyretic, it acts rather more slowly than antipyrine or acetanilide, but efficiently, and it has the advantage of being free, or almost free, from any depressing effect on the heart. Some observers even think that it exerts a sustaining action on the circulation. As an analgetic, it is characterized by promptness of action and freedom from the disagreeable effects of the narcotics. It has been much used, and with very favorable results, in neuralgia, influenza, and various nervous disorders characterized by melancholia."

DEAFNESS—THE RESULT OF CIRCULATORY AND PNEUMATIC IRREGULARITIES BEGINNING IN NEGLECT.

By JOHN F. WOODWARD, M. D., Norfolk, Va.,

One of the Surgeons to the Eye, Ear, Nose, and Throat Department, St. Vincent's Hospital, etc.

Grüber, in his excellent work upon diseases of the ear, says: "Plastic inflammations in the naso-pharynx usually occasion similar affections of the middle ear."

Dench, in his clear way of putting things, says: "Frequent exposure to cold resulting in repeated attacks of acute rhinitis or acute naso-pharyngitis from which the vessels within the tympanum are frequently engorged with blood, is a most common cause of chronic catarrhal otitis media."

The constant tendency to forget or neglect the warnings so cleverly put by Grüber and Dench, by both specialist and general practitioner, has led me to make a *resume* of the more salient points in *throat deafness, or deafness caused by obstruction to sound waves.*

Special investigation of the contents of the temporal bone has of late stirred up a lively interest that holds the attention of the general practitioner and opens the eyes of the surgeon, especially to the brilliant results of brain surgery obtained by a better knowledge of the pathology of ear diseases.

But it is to diseases of the middle ear that lead to impairment or abolition of sound conduction that I would direct attention. A blind person draws upon our sympathy and compassion; but a deaf person, while living in the vigor of the world's hustle, is handicapped on every side. A loss or impairment of no other of the special senses is productive of more profound impression upon a man's or a woman's career as to his or her usefulness in the social or business world than that of audition. Yet intelligent people allow themselves and their children to become unfit for the daily walks of life simply from a mock dread of specialism, or imagine that they are condemned *ex-dono* of inheritance.

It is a fact that people get slightly deaf sometimes before they are aware of any trouble, as our ability to hear is far beyond the needs of every-day life. This will excuse some, but the larger majority that live under the impression that deafness runs in families, will have to be educated. Inherited deafness is a very unlikely possibility. Outside of the fact that a child may be born into the world with a limited power of resistance and be rendered thereby more liable to physiological errors that may redound to a tendency to pathological changes in the blood supply and cellular structure of the auditory mechanism, I do not believe in inherited deafness; for I am firmly convinced that by far the largest number of cases of impairment and loss of hearing can be traced back to *neglected nose* and naso-pharyngeal troubles of childhood and early adult life.

Mothers have been taught to look upon discharges from the ear and nose as necessary accompaniments to healthy growth of children—not cognizant of the fact that just such neglect may consign what otherwise might be a useful life to a bearable existence.

The proper functions of the ear are only accomplished by a constant regulation of the blood supply to the middle and internal ear and a patency of the Eustachian tube which admits of a measured air supply to the tympanum, thereby regulating the tension of the ossicles, endo- and perilymph, which is essential to the ultimate perfection of transmitted æriel waves.

The pneumatic and hydraulic arrangement of the tympanum and internal ear must be constant; and to keep this constant, there must be a patency of the Eustachian tube and a proper interchange of tympanic and naso-pharyngeal air, thus equalizing the external and internal pressure. Any stenosis or condition of nose or naso-pharynx producing mouth-breathing and closing of the Eustachain tube or tubes, will result in rarification of the naso-pharyngeal and tympanic air.

This rarified condition of tympanic air results in twofold errors. *First*, lack of resistance to blood pressure; and, *secondly*, to increase of external air pressure over the internal resistance—the former ultimately results in weakeuing of the walls of the blood vessels; hence hypertrophies and hyperplasias of the lining membrane of the tympanum, the latter in an overbalance or preponderance of external pressure which drives the drum-head in and produces constant and damaging pressure upon the contents of the internal ear.

And, as sound waves focused upon the drum-head make certain impression upon the acoustic nerve terminals through the medium of the ossicles, the endo and perilymph, in proportion to the amount of resistance and elasticity exerted by the said media, and tonal perception is not dependent so much upon quantity as quality of sound waves; tonal perfection is at the mercy of the circulatory and pneumatic arrangement of the ear.

Now, as I am dealing simply with chronic catarrhal inflammations of the tympanum and Eustachian tubes as neglected cases of nose and naso-pharyngeal diseases, I will add below some cases showing only this form of deafness. I think if you read these cases carefully, you will see cause and effect very similar in each case.

Case I.—R. S., male, æt. 17, from Surry county, Va.—His health has always been good, though he is not robust; family history good; no deafness in immediate family; his father first noticed some nose and throat trouble when his son was seven (7) years old, but never had him treated. *Examination:* R. E. pressure, L. E. inches; can hear whispers better than conversation; negative Rinne; positive Weber; both Eustachian orifices stopped and no sensation upon inflation, pharyngitis and relaxed palate; septum deflected to the right, and double inferior turbinate hypertrophy. He is improving under treatment.

Case II.—R. A., male, æt. 24, Richmond, Va.—Perfectly healthy all his life, but has had throat and nose trouble for the last seven or eight years. *Examination:* Chronic follicular pharyngitis, elongated palate, puffiness about orifice of both tubes, septum deflected to left and hypertrophy of inferior and middle turbinates of both sides; constant dripping in throat, and at times ringing and full sensation in ears when hearing is very imperfect. Hearing is improving under treatment.

Case III.—X. Y., æt. 5, Norfolk, Va.—History of adenoids in several of the brothers and sisters. *Examinations:* Chronic otorrhœa, and discharge from the nose; enlargement of cervical glands; hearing imperfect in both ears; negative Rinne; large bunches of adenoids covered with secretions. Removal of adenoids and systematic treatment is giving good results, but his hearing is still very imperfect.

Case IV.—Miss L. F., æt. 50, Norfolk, Va.—She has never been very strong, but does not remember any severe spell of sickness; family history good; began to get deaf when a girl; has always been subject to cold in the head. *Examination:* Hearing, R. E. pressure; L. E. three inches; ringing and buzzing in head on right side; negative Rinne; positive Weber. Decided pharyngitis, and stenosis of right Eustachian tube, elongated palate, deflected septum to the left, hypertrophy of inferior posterior turbinate right side, and a very relaxed condition of mucous membrane lining throat and vault, as if she had had a severe naso-pharyngeal trouble. Treatment has relieved the ringing in the ear, but the hearing has not improved very perceptibly. Drum-head in right ear retracted.

Case V.—Rev. E., æt. 30, Virginia.—Apparently healthy, but not robust; he has had colds in the head, dripping sensation in throat, and more or less throat trouble for ten years, or ever since he began to speak in public. *Examination:* Chronic follicular pharyngitis with full tense condition about the Eustachian tubes; double inferior turbinate enlargement; hearing perfect at times, dull at others, especially if he has had a cold; drum-heads not affected; subject to attacks of acute pharyngitis, and is then bothered with rumbling in ears and slight deafness. Treatment is improving his hearing.

Case VI.—Miss M., æt. 18, Prince George county, Va.—Never very sick, but has never been very strong; family history good; she had measles early in 1896, and ears have been running ever since. She had a typical inflammation of both ears with rupture of both drum-heads. *Examination:* Hypertrophy of tonsils; spur of right septum; hypertrophy of both inferior turbinates and middle turbinate of right side; discharge from both ears, and boggy condition of external orifices; chronic pharyngitis and lingual tonsils. There was some involvement of the entire lymphatic system of the upper throat. Negative Rinne, though hearing was very good on left side, and watch six inches on the right. She has improved very much since the treatment began, and now hears very well.

Case VII.—Mr. B., æt. 17, Norfolk, Va.—Healthy, never sick, and never had a spell of sickness; family history perfectly good. *Examination:* Hearing, R. E. perfect; L. E. pressure, drum-head so much retracted that lustre was gone. On infiltrating ear, no sensation was felt in left ear. Subjective sensation of rumbling and buzzing so intense and constant that he could not sleep; no pain; relaxed palate and naso-pharyngeal tissue. He said that for some years he had been troubled by a dripping in the back of throat, but had not felt so much of late. Enlargement of submucosa of posterior septum, negative Rinne, and positive Weber very well defined. Treatment relieved the rumbling noise and restored the hearing to normal in six weeks.

Case VIII.—Mr. E., æt. 17, Franklin, Va. He has been strong and healthy all his life, but had measles in early part of 1896, and has had discharge constantly from both ears ever since. He had pain in both ears, and then a discharge with rupture of both drum-heads. *Examination:* Hearing, R. E. watch 1, whis-

per very good; L. E. watch pressure, both drum heads perforated and imperfectly healed; boggy condition of external orifices; chronic pharyngitis and vault of pharynx covered with thin, whitish mucus; hypertrophy of both inferior turbinates, very slight sensation in tubes when inflated. Negative Rinne; treatment has benefitted hearing some, especially in right ear.

Case IX.—Miss A., æt. 45, Greenville county, Va. She has never been strong, and has always had some form of throat trouble. *Examination.*—Deaf as a post, bone conduction perfect. Negative Rinne. Stenosis of both Eustachian tubes; signs of old pharyngitis; some turbinate hypertrophy; she has never known when she became deaf; and, as it was so gradual, she was never treated for it. Treatment seemed to do some good, but I have not heard from her for a long time.

Case X.—Mr. F., æt. 23, Greenville county, Va. He has always been healthy; family history good; began to get deaf three or four years ago. *Examination.*—Hearing, R. E. watch pressure; L. E. 4 inches, deflected septum to the left and small spur; slight turbinate hypertrophy; accumulations in pharynx, and chronic pharyngitis; right tubal orifice swollen and stopped up. No sensation upon inflation. Sense of rumbling in right ear and constant fullness; upon opening the tube and spraying inflamed area, there was an immediate sense of relief with improved hearing, and he is improving rapidly under treatment.

The cases reported above are a few from a large number of cases, and are not unique, for we see them every day, yet every one of them advance the idea of deafness from neglect. Deafness might have been either prevented or modified in all these cases. Their histories have a monotonous similarity, and when they tell us that they have had "throat trouble" from early youth, you can put it down as meaning, either *adenoids* or some decided *rhinitis* or *pharyngitis*. The early subjective sensation of stuffiness in ears, ringing and rumbling, show changes going on in the middle ear, while the crackling and popping sometimes heard in the ear, after or during an acute pharyngitis is caused by the action of the *levator palati* and *tensor palati*, which are intimately attached to the lining membrane of the tube.

The continuity of tissue, similarity of mucus, and cellular structure, and, to a great extent, the anastomosis of blood supply, make it more convincing that *obstructive deafness* is preeminently a consequence of some trouble in the nose or naso-pharynx. The similarity of the histories of the cases shows them to be an expression of a chronic pharyngitis, inflammation of tubes, results of deflected septum, turbinate hypertrophy, or some systemic trouble which causes stenosis of nares and irritation of the pharynx with consequent mouth-breathing. Then, from continuity of tissue or general disturbance, changes follow in the mucosa and submucosa, or, rather, periosteum, and the blood supply of the tubes and tympanum, first of a cellular nature, then of fibrous, which produces hypertrophic and hyperplastic conditions of the contents of the tympanum to such an extent that ossicular tension and labyrinthine pressure are unstable, hence aerial conduction becomes impossible or perverted.

The constant turgescence and weakened state of the blood vessels either precipitate fluid into the tympanum or produce fibrous changes with the resultant sclerosis, ankylosis, etc.

This subject has been thoroughly written up by many able writers, yet it has made very little impression upon the general public, either because the general practitioner does not instruct his patients in the necessity of early treatment, or the specialist has failed to impress the profession at large as to the necessity of prevention through early treatment of nose and naso-pharyngeal diseases.

I will close by referring to the views of some of our able men, and let you see how they tally with the writer of this paper. Schadle, in the *Laryngoscope* for July, 1896, writes that "The cause of chronic otorrhœa in the child in the majority of cases can be found in the existence of adenoid vegetation. Inflammatory states of the tissue brought on by exposures to temperature changes, or to the exanthematous diseases, generally give rise to a catarrhal disease of the middle ear, which may eventuate into a persistent otorrhœa or mastoid complication. They so prevent perfect ventilation of the drum. Defective hearing in the young sometimes wholly depends upon this condition."

Dundas Grant, in the same journal, says:

"It may here be noted that insidiousness of outset and indefiniteness of cause (with early occurrence of tinnitus), are very characteristic of the sclerotic form of middle ear catarrh, and that impairment of hearing power may arise in the typhanic membrane or middle ear (including Eustachian tube), called obstruction deafness;" and gives a good differentation formula:

Nerve deafness:

(1.) There is diminution of bone conduction.

(2.) There is a loss of hearing for high-pitched tones.

(3.) There is a decrease of hearing power in the midst of noise.

(4.) Hearing for conversation is relatively better than for watch.

(5.) Rinne positive; Weber negative.

Obstructive deafness:

(1.) There is loss of air conduction only, with negative Rinne.

(2.) There is better hearing for high than for very low tones.

(3.) There is increased hearing in the midst of noise.

(4.) Hearing for conversation is relatively worse than for watch.

(5.) Rinne negative; Weber positive.

For the sake of those not specialist, I will explain the Rinne and Weber tests. Rinne test is for bone and air conduction. When tuning fork dies out on the mastoid, and is placed to ear and still heard, this is Positive Rinne; and when it is not heard at ear, after dying out at mastoid, it is Negative Rinne or Rinne.

Weber's test is when the fork is placed upon the vertex and heard better in the deafer ear—Positive Weber or Weber—and denotes trouble in air conduction; but heard better in the sounder ear, it is Negative Weber.

Bottome, writing in *N. Y. Medical Journal*, for May 22, 1897, upon adenoids in the naso-pharynx, noting their effect upon hearing, says: "If this naso-pharyngeal cavity is blocked up by the presence of adenoids and the nasal respiration thereby interfered with, the air in this cavity is liable to rarefaction—that is, a diminution of atmospheric pressure. Even though this diminution is slight, the pressure on the outer side of the drum-head of fifteen pounds is constant, and the result must be a forcing in of the drum-head or contraction. This condition will cause deafness to a certain extent, and the deafness will increase as the further steps in the pathological process develop—ankylosis of the ossicles and atrophy of the tympanic membrane."

Ingals, in speaking of the nasal conditions that influence hearing, says: "The inflammation of acute rhinitis may leave obstruction of the Eustachian tube; and in chronic rhinitis, frequently the sense of hearing is obstructed, and, indeed, most cases of deafness are the results of hypertrophic rhinitis, and that one of the most common causes of *throat deafness* is the enlargement of Luschka's tonsil; also that any morbid state of naso-pharynx which gives rise to obstruction of Eustachian orifices or chronic thickening of lining membrane of the tube will impair hearing."

Recognizing now, as we do, the intricate blood supply of the naso-pharynx and tympanum, the similarity of tissue, the vastness and continuity of their lymph system, and a necessity of equilibrium in air pressure and blood supply, and the decided sympathy between the nose, naso-pharynx, and tympanum, I think we will do well to try and avert the calamity by early treatment rather than encourage it by criminal neglect.

35 *Granby Street.*

CASE OF RUPTURE OF HEART VALVES.

By ELLIOTT T. BRADY, M. D., Chatham Hill, Va.,
Member of the Medical Examining Board of Virginia, etc.

Being reasonably sure of my diagnosis, and failing to find a record of any case not immediately fatal, I wish to record this, hoping it may prove of interest to the profession.

Edward A., aged 17 years; white; male; robust. Previous health perfect. Family history good. In January, he attempted to lift a very heavy "back-log," when he suddenly felt "something snap" in his chest, and immediately dropped to the ground. He was conscious, but helpless; his face was purple, extremities cold, and heart palpitating. He was carried into the house, and I saw him eight hours later.

At this time, he was perfectly conscious, his respiration slightly hurried, but no dyspnœa. Face and limbs were of that peculiar livid hue seen in the "morbus cœruleus" of infants. There was no displacement of the heart. Heart-sounds jumbled and tumultuous, giving a churning sound. It was impossible to differentiate any one valve sound. The impression given was that of an exaggerated sound, such as might be imagined would be heard if all the valves permitted regurgitation at once. There was marked arhythmia. The pulse was soft and compressible, and varying from one beat in five seconds to twenty beats in the same interval. There was also present a marked flapping sound, which was not regular, nor did it seem to be synchronous with either of the valvular sounds. This could be heard from three to twenty times a minute, and was apparently caused by some loose fragment of considerable size, floating loosely at one end, and occasionally striking some near-by tissue with sufficient force to produce a sound.

I appreciate the very unsatisfactory nature of this description, but it is as definite as I can make it verbally.

As long as the patient remained in the recumbent position, there were no other symptoms, except flashes of lividity and frequent chilly sensations, of short duration and corresponding with the livid periods. On the least effort at motion, even of one limb, the heart's action became tumultuous, the patient dizzy, and the whole periphery markedly livid and cold. There was no pain at any time—the only discomfort experienced being the excessive prostration, a slight smothered sensation, and the chilly sensations. Turning on the right side gave no relief. Indeed, no posture other than an absolutely recumbent one seemed other than hazardous.

I diagnosed, by exclusion, rupture of either the foramen ovale, or of the aortic valves, or both. Prescribed absolute rest in the recumbent posture, liquid diet at regular intervals, dry, hot applications and friction to the extremities, drachm doses of Epsom salts daily, and one-eighth grain of morphia with one minim of fl. ext. gelsemium every two hours until heart was more regular; then same dose every three hours. The next day the heart was more regular, but still varied from 30 to 150 in a minute. The slightest unusual sound or jar caused it to rise rapidly. Sounds unchanged in character. Lividity and chilliness continued. Still there was neither dyspnœa nor pain. Any muscular effort, however slight, brought on violent heart action and the accompanying lividity.

Treatment was continued for a month. Improvement was regular, but very slow, and at the expiration of a month there was still inability to assume any other than the recumbent position. He was then given one-forty-eighth of a grain of strychnia, with two cactina pellets, every six hours, which prescription he is now taking.

He has gradually become accustomed to the abnormal state, and his system seems to be gradually adapting itself to the change, and at this time, nearly six months after the accident, he sits up all day, can walk slowly, and even rides horseback for short distances (*against orders*). He eats regularly and with zest. Has gained flesh and feels well. There is considerable compensatory hypertrophy. The same churning sound is present, but the loose flapping sound is less marked and less frequent, though still present. The least excitement or over-exertion still causes lividity and weakness. There has been no disturbance of either kidneys, liver or digestion worthy of note.

I believe I can isolate a tricuspid regurgitation now, but that is certainly not the sole trouble. I believe my diagnosis was correct, and, from the present condition of the patient, it seems reasonable to expect a sufficient improvement in time to admit of light sedentary employment. I examined this patient a few months before his accident for a slight bronchitis, and at that time detected no heart lesion. I would be glad to hear criticisms of diagnosis or reports of similar cases.

THE USE OF NORMAL (HORSE) BLOOD SERUM IN THE TREATMENT OF TUBERCULOSIS.

By W. THORNTON PARKER, M. D., Groveland, Mass.

Member American Medical Association, Member Massachusetts Medical Society, etc.

When this paper was promised to be read at the meeting of the American Medical Association, it seemed as if ample time and opportunity would be afforded to make some experiments with normal horse serum in the treatment of tuberculosis. Unfortunately, too many obstacles have been encountered to bring this about; and while considerable has been done, and many investigations have been made, the interesting work which I had planned must wait for better opportunities before definite results can be presented.

In searching for information concerning tuberculosis, and in collecting the records of experiments with normal horse serum, much that is valuable has been found; and it seems as if we are justified in believing that in the near future this form of serum-therapy will receive the serious attention of the medical profession.

Beyond a peradventure, the treatment of phthisis, in spite of the great improvements which have been made, is still so imminently unsatisfactory that any suggestion which promises to be an improvement on the old methods ought to have a patient examination and trial.

Phthisis is, generally speaking, a preventable disease, and is to be attributed, in most cases, to neglect of the laws of hygiene. Its origin is to be sought for in weakened constitutions, in homes where sanitary conditions are more or less wanting, in the habits which prevent proper expansion of the chest, and where air, more or less vitiated, is breathed, instead of the pure air containing the ingredi-

ents necessary for health and life. It depends largely upon improper food and clothing, unhealthy homes, deprived of needed sunlight, and poisoned with damp and musty atmosphere. It is found in those whose habits are sedentary, and where exposure to hard and chilly winds take place; in bodies whose circulation is not strong enough to re-act after exposure.

Sanitary science has diminished very largely, within the last twenty-five years, the mortality from what used to be "the terrible scourge of consumption."

We find this disease common in towns where indifference exists as to wholesome water and air supply, and where noxious odors are continually tolerated, and where sanitary attention of the blood is of the first importance; that the breathing of air rendered impure from any cause is not only hurtful, but often dangerous, and that the highest degree of health is only possible when to the requisites of wholesome food, proper clothing, and sunshine, is added an abundant supply of pure air.

The following quotation from Pepper's *System of Medicine*, Vol. I, p. 101, article on "General Morbid Processes," by Dr. Reginald H. Fitz, is of value in this connection:

"The discoveries of Koch show that the production of tuberculosis is dependent upon the presence of destructive bacilli; and that these bacilli are present not only in miliary tubercle, but in scrofulous glands and joints, in cheesy inflammation of the lungs, and in the yearly distemper of animals. The identification of tuberculosis with the pearly distemper and certain scrofulous affections is thus established from the etiological as well as the histological point of view.

"As the bacilli are to be regarded as the virus of tuberculosis, so their introduction into the human body is necessary for the production of this disease in man. It is obvious, however, that other factors than the virus are necessary, for not every one exposed to the reception of tubercular bacilli becomes tuberculous. It may well be that scrofula is still to be regarded as that condition of the solids and liquids of the body which offers favorable opportunities for the retention and growth of the bacilli, and thus for the production of tuberculosis. Formad claims that he has discovered structural peculiarities of tissue as a cause for the scrofulous habit, which he regards as synonymous with a predisposition to tuberculosis. These peculiarities are manifested by a roundness of the lymph spaces and their partial obliteration by cellular elements. He also maintains that these features are not only of congenital origin, but may be acquired through malnutrition and confinement."

We are reminded by this latter statement of the great mortality among prisoners. The development of tuberculosis in our jails and penitentiaries is a well known fact. The intense suffering caused by shame, humiliation, and confinement, amounts, in many instances, to a sentence to death by tuberculosis—a lingering, cruel, death method of the hangman's rope or the bullet.

We quote again from the writer:

"Those who claim that scrofula and tuberculosis are identical, must, in the light of Koch's discovery, demonstrate the presence of the bacillus in all scrofulous inflammation, and deny the existence of scrofula apart from indisputable manifestations of the activity of the bacilli of tuberculosis. It may be that such evidence will be presented; until it is collected, scrofula and tuberculosis are to be regarded as distinct, though often co existent. The scrofulous person is frequently tuberculous, the tuberculous person is usually scrofulous; the non scrofulous person, however, may die of tuberculosis, while the individual may be scrofulous without containing tubercle.

"The actual inheritance of tuberculosis is very unlikely, although this disease is frequently found in successive generations of a single family. The various members of the family are rather to be regarded as furnishing a suitable soil for the growth of the tubercular bacillus, and their exposure to its seed is favored by the existence of tuberculosis in one or more members of the household. The scrofulous condition is still to be regarded as hereditary as well as acquired, and the scrofulous remain as the class to be especially protected from the reception and effects of the bacilli of tuberculosis."

A recent item concerning the heredity of tuberculosis appeared in the *Journal of the American Medical Association*, March 13, 1897. It is a translation taken from the *Archiv. für Kinderheilkunde*, B. xxi, H. v, vi, page 328. Szegö, after a careful study of the subject, reaches the conclusion that the inheritance of tuberculosis is either parasitic or dispositional (perhaps toxic). This heredity does not exclude the possibility of contagion. On the contrary, the predisposed subject furnishes pre eminently a susceptible soil. It is difficult to determine which is the predominant factor in the transmission. This may result through infection of sperm or ovule or through the placenta. Involvement of the lungs, of the

intestines, of the glands adjacent to the mouth and the nares, indicate rather origin by contagion, while tuberculosis of brain, joints, bones and abdominal viscera, bespeaks rather a congenital causative condition. The congenital germ of tuberculosis may remain latent in the organism for a variable period of time, and exert its influence only when the general condition of the organism is depreciated.

The treatment of tuberculosis by the injection of normal horse serum, is auxiliary to the treatment already employed by our most skilful practitioners. *Firstly*, the climate cure, the atmosphere of suitable locations in New Mexico, where there is moderate elevation, dryness and abundant sunshine, and where reasonable opportunities for out-of-door life and employment shall make homesickness or mental depression quite unlikely; *secondly*, hygiene, systematic bathing, suitable clothing, etc.; and, *thirdly*, the therapeutic treatment. For remedies in the internal treatment as adjuncts to wholesome digestible food—iron and cod-liver oil have long been employed. As to cod-liver oil, I have seldom prescribed it. A recent article in the *Journal of the American Med. Association* calls attention to a pamphlet by Dr. Andersmith, of Brooklyn, on the "Modern Aspects of Tuberculosis," in the course of which he pays his respects to the hypophosphites and the cod-liver oil. As to the latter, he says that cod-liver oil has been administered as a matter of routine in larger quantities than any other remedy. His personal experience has led him to the opinion that it is very much worse than useless. The most that he has ever felt justified in hoping from it has been that it would not do harm. He has never seen it act beneficially. Patients who improve during its administration do very much better, as a rule, after discontinuing its use. "It acts as an alterative, by changing decidedly the oxidation process of the system. But unfortunately, its alterative effects are in the wrong direction, decreasing the perfection of the proteid oxidation and often depriving unfortunate patients of the single chance of recovery which they might otherwise have retained. The free ingestion of it rapidly decreases the urea in the urine, and increases the incomplete or imperfect products of nitrogenous waste. The more perfectly it is emulsified, the more detrimental it becomes, because, thus, it is more palatable, and is less likely to produce digestive disturbance, and to be, therefore, refused entrance to the system. The emulsion also favors the absorption of an immoderate quantity, thus exhausting the oxygen supply and rendering the suboxidation of the proteid molecule, with all its ill effects, doubly certain. It disturbs digestion and prevents the utilization of other and more valuable forms of food stuffs."

But in the value of the exhibition of ferruginous preparations, there can be little if any doubt. Ferratin is one of the new remedies recommended by the committee of revision for adoption into the new fifth edition of the Russian pharmacopeia (*Chemiker Zeitung*, 31, 1897). It is an organic iron compound, of albumin and tartrate of iron, forming a definite iron albuminic acid; it contains 7 per cent of iron, is readily absorbable, does not constipate, and has no outward effects. On the testimony of its discoverer and others, it is identical with the natural ferruginous element of food, absorbable in the system and stored in the liver and other organs as a "reserve iron for blood formation."—*Journal of the Amer. Med. Assoc.*

Most of us can remember the excitement caused amongst medical men, as well as that naturally to be expected in the laity, when the original discovery of Koch was announced some years ago. How great the hope which was kindled and how distressing the disappointment. A recent editorial in the *Lancet* states that this indefatigable toiler is still laboring in the same field, and that he now claims to have *succeeded* in obtaining a preparation ("*Tuberculin R.*") that has an immunizing and curative effect. Not only was the restoration of diseased organs in tubercular guinea-pigs proved, but he says early cases of phthisis and lupus cases were, without exception, materially improved by the treatment. He does not use the word "cured" until a sufficiently long time has passed without relapse.

The new preparation has had no alarming by-effects whatever. The new tuberculin is injected subcutaneously; the initial dose is $\frac{1}{500}$ milligram, increased by degrees to higher doses.

An item quoted from the *Munchener Med. Wochenschrift* (in a recent issue of the *Journal of the Amer. Med. Assoc.*) states that Niemann claims that he has succeeded in isolating an antitoxin from the serum of young goats that had been inoculated with increasing doses of a tuberculin prepared from a virulent culture of tubercle bacilli. From experiments on guinea-pigs, in which tuberculosis had been produced by inoculation, he claims to have demonstrated that his goat's serum contains an antituberculin. Animals showing tuberculous ulceration at the seat of inoculation, with tuberculous enlargement of the glands, were

cured by inoculating them with the goat's serum, the ulcer healing and the glandular enlargement entirely disappearing. Niemann also obtained good results in the treatment of tuberculosis of moderate severity in human individuals. Under treatment, the general condition of the patients showed marked improvement, the tubercle bacilli disappeared from the sputum, and the cough and expectoration diminished. High elevation of the temperature rarely followed the injection of the serum, even in large doses, while albuminuria was never observed.

Rightly or wrongly, in the minds of many sensible practitioners, and even in the minds of the laity, a certain dread of possible evil results will continue to intrude. No matter what the high reputation of the brilliant discoverers amounts to, tuberculin in any form is suggestive of an active and dangerous element which may set up or increase the disease it is supposed to overcome.

Such objections cannot be reasonably advanced against the use of normal (horse) serum.

In addition to the general treatment of tuberculosis which is in vogue at the present time, we have, I believe, an agent in serum-therapy which is peculiarly suitable to counteract the tuberculous destruction of health and life—an agent which has been found of the greatest value in mitigating morbid action of various kinds.

The agent to which I now refer is the horse blood-serum, taken from mature animals in apparently robust health, without having been artificially immunized. This serum is especially prepared with a minimum per cent. of trikresol to prevent contamination.

In Surgeon-General Sternberg's valuable work on Immunity in Serum-therapy, he quotes from a report by Dr. Paquin, published in 1895, as follows:

"Blood serum of horses seems naturally antagonistic to the germs of tuberculosis, but cannot in its natural state serve in treatment with much good, as it is too slow, and it takes enormous quantities of it, too, to produce useful results." He admits, however, that horse blood serum *may be* rendered more strongly antagonistic to the tubercle germ by the treatment of the animals by a proper technique.

We agree with the statement as to its natural antagonism to the tuberculous poison; but we take exception to the statement that its action is too slow, or that the quantity required is too large. Its steady action has been determined and its good results have been already proven.

In a paper contributed by F. J. B. Cordeiro, Passed Assistant Surgeon U. S. Navy, concerning Behring's diphtheria serum, in the *Annual Report of the Surgeon-General of the U. S. Navy* for 1895, he makes the following statement:

"There is yet another kind of immunity, an innate or species immunity, which renders certain species incapable of acquiring a disease which is deadly to other animals"—for instance, dogs are immune to anthrax and horses to tuberculosis. In regard to this latter statement concerning tuberculosis in horses, Dr. Liantard, of the Veterinary College of New York, in a recent letter to the writer, states that, in his opinion, "horses are not free from tuberculosis, though it is very rare. Cases are on record where the post mortem lesions positively proved the nature of the disease."

But I believe that where such lesions have been discovered, the conditions for the reception of the disease must have been of such an extraordinary nature that the development proved the rule by its extraordinary rarity.

Therefore, before accepting the theory that tuberculosis *can* be developed in the horse, we should need to carefully examine into the history of these reported cases.

In a recent article by Dr. Spalding, of Boston, in the *New England Medical Gazette*, he states that there are those who believe that the immunizing process in preparing horse blood serum is superfluous in the treatment of diphtheria. He also states that "no one has ever yet claimed to have seen a horse ill with genuine diphtheria; and if so, this immunizing process to which it is submitted is quite superfluous."

Dr. Burton, of Nantes, takes this ground, and has used the normal non-immunized serum in the treatment of diphtheria with as good results as have attended the use of the ordinary antitoxin.

We believe that the same theory holds good in regard to the use of horse blood serum in the treatment of scarlet fever, tuberculosis, lupus, and leprosy; in other words, that the quantity required to bring about antitoxic results will not be found "too bulky or too slow in its action." Horse blood serum is a natural antitoxin.

Dr. Carrasquilla has reported, in the *Semaine Medicale*, January 6, 1896 (quoted by the *New York Therapeutic Review*), that he has used injections of serum with success in both the nervous and tubercular varieties of leprosy. He

has observed its action in fifteen cases, and has noted that after the first injection the local lesions have ceased to advance.

The author neglects to say what serum was used and how it was prepared.

He reports one case in detail, in which the nodules were absorbed, the skin over them becoming normal in color, texture and sensibility, while the ulcerations cicatrized; the same reparative process took place also in the mucous membranes. In another case, absorption of the nodules was preceded by softening and suppuration.

In the *N. Y. Medical Times* of recent date, a paper is quoted from Lacrug (*Arch. de Gin. Obstet. y Pediatra*), in which the author states that he has tried the effect of serum from a healthy horse on several children in his wards. Doses of from 3 to 5 cm. were injected daily, and repeated every day for three or four weeks. The serum seems to act as a most powerful tonic. The red corpuscles increase in number, weight is gained, and the child visibly becomes stronger.

There is no untoward secondary effect except slight rise of temperature and some acceleration of the pulse; there is no erythema and no albumen. A trifling epithelial deposit seen in the urine indicates slight irritation of the kidney, and the urine becomes more acid. These phenomena, however, are really transient. The good effects of the injections are quickly manifested, cases of athryssia in particular are speedily benefited, and the cure is maintained. Sixteen cases of chorea, treated in the manner described, were cured in a period of fifteen days on the average.

What I have attempted to prove is that horse blood serum, introduced into the circulation of patients suffering from contagious and infectious diseases, does by the process of mixing a healthy antitoxic fluid with the circulatory fluid in the individual, counteract the march of the tuberculous disease, sustain and nourish the patient, and in time, by its action upon the diseased system, bring about a cure. It is not claimed that this agent is so powerful that it can act absolutely alone; but, as the assistant of sanitary science, it is probably one of the most valuable therapeutic agents of modern medical science.

Dr. William M. Polk

Is said to secure the largest annual income from practice in the city of New York—about $100,000 a year. He is a native of Tennessee, and a son of the lamented Bishop Polk.

CEREBELLAR TUMOR—TWO EXPLORATORY OPERATIONS—TUMOR NOT REMOVED—AUTOPSY—CYST AND FIBROSARCOMATOUS TUMOR OF THE LEFT LOBE *

By JOHN F. MORAN, M. D., Washington, D. C.,
and
JAMES KERR, M. D., M. Ch., Washington, D. C.

William B., aged 47; constitution good; married and father of children; occupation, merchant.

Antecedents: Father died of paralysis, aged 60 years; mother died of asthma, aged 68 years. Thirteen brothers and sisters; one died of typhoid fever, aged 8 years; ten died in infancy; one brother living, and he is tubercular.

Paternal Grandparents: Grandmother 92 at death; grandfather, age and cause of death unknown.

Maternal Grandparents: Grandfather died of cancer of the stomach, age unknown; grandmother aged 60, cause of death unknown.

All family on paternal side long lived; mother's relatives died comparatively young, and most of them succumbed to tuberculosis.

Early History: From childhood suffered with headaches, which his parents attributed to overstudy, and thought seriously of taking him from school. At the age of 17 he was struck on the head with a scrubbing brush, but did not experience any serious trouble. Of late years the headaches have recurred with great frequency, as often as twice a week, particularly since February, 1895. They are of stabbing character, and limited to the occipital region of the right side, the paroxysms lasting from twelve to twenty-four hours, and since August, 1895, accompanied with vomiting. Immediately after cessation of the attack is able to eat, and does not suffer any gastric distress. Complains of vertigo in the recumbent, as well as sitting and erect position, and on attempting to walk, staggers and reels toward the left side and sometimes falls forward. Difficulty of vision and complains of buzzing in ears. Specific history negative, no paralysis or convulsions, mental state excellent.

Ophthalmological examination by Dr. Wilmer showed myopic astigmatism, perfect sight with refraction error corrected, and no organic disease in the interior or exterior of the eyes. Otological examination by Dr. Richardson: Slight retraction of membrana tympani, catar-

* Read at a meeting of the Medical and Surgical Society of the District of Columbia, May 20, 1897.

rhal inflammation of middle ear cavity, hearing in both ears $\frac{30}{40}$, nerve conduction good.

I saw the patient for the first time January 1, 1896, and he was then in the throes of a paroxysm. His excruciating suffering and uncontrollable vomiting was pitiful in the extreme. During the paroxysm, as well as the intervals, his temperature remained normal and pulse regular and uniform, ranging from 70 to 80; right pupil larger than left, both respond to light; no nystagmus and no appearance of optic neuritis; urine normal. Nothing abnormal about sense of taste or smell, no deviation of tongue, no impairment of articulation or difficulty of swallowing, no tenderness on percussion, nor was there any difference in percussion note of either side of skull observed. Staggering, uncertain gait, with reeling towards the left side, marked incoordination of the left hand. Patellar reflexes little if at all exaggerated, and no definite ankle clonus. No distinct abnormalities of sensation detected.

The paroxysmal headaches, projectile vomiting, vertigo, absence of fever, staggering gait associated with inclination to left side and sometimes to pitch forward, prompted a diagnosis of cerebellar neoplasm. Although the specific history was negative, a saturated solution of potassium iodide in milk was ordered in increasing doses up to forty grains four times a day, and continued for several weeks without the slightest benefit. While the patient's family history was markedly tubercular on maternal side, it was not deemed advisable to further continue medical measures, as it was known that for several months previous to my assuming charge he had received supportive treatment. An operation was therefore advised, hoping that it might at least give relief, if it did not afford a radical cure. Drs. Kerr and Osler were called in consultation. Both, after a thorough examination, confirmed the diagnosis and approved of surgical interference. Owing to the absence of localizing symptoms, it was impossible to tell the exact situation of the lesion. The inclination to the left side, occipital headaches and dilatation of right pupil, suggested its probable location in the right lobe.

The operation was performed at Providence Hospital by Dr. James Kerr, assisted by Dr. Edward M. Parker, in January, 1896. A tongue-shaped flap with free border reaching the superior curved line of the skull was made in the right occipital region. The opening was made in the skull with the trephine and enlarged beyond the median line by means of chisel and mallet and rongeur forceps. There was no apparent bulging of the dura, and the membrane was normal. It was incised and reflected, which permitted excellent exposure for palpation and inspection. Exploration of the right lobe was made, but nothing abnormal detected. The left lobe was then explored with a groove director, and it likewise gave negative results. Although great care and gentleness were taken, the right lobe was considerably lacerated, and a considerable portion removed. The cavity was packed with iodoform gauze, the dura closed and the flap united with several interrupted sutures. The gauze packing and dressings were renewed daily for several weeks, then a rubber drainage tube was placed in the lower angle of the wound and allowed to remain until the discharge ceased.

Although the operation failed of removal or detection of the lesion, it was successful in relieving the distressing headaches and vomiting, and there was gradual improvement of the ataxia and inco-ordination, so that the patient was able to walk with the assistance of a cane. The disturbance of vision, tinnitus aurium and giddiness still remained, and immediately following the operation there was slight difficulty in articulation. His general health improved for nearly a year, when the headaches recurred, attended with nausea, gait became more and more unsteady, and finally he was unable to walk without assistance The disturbance of vision, hearing and articulation became more and more marked and the vertigo more pronounced. At the same time he experienced difficulty in swallowing, food often regurgitating through the nares; also complained of tingling in the lower extremities.

Examination of the head showed an elastic globular tumor protruding through the opening made in the skull at the previous operation. Pressure upon it aggravated the headaches and other symptoms.

I advised a second operation to relieve intercranial pressure and for purpose of further exploration. Dr. Kerr was called in consultation, and after conferring with Dr. Osler, an operation was agreed upon. During the year, Dr. Wilmer made several examinations of the eyes as follows:

April 22, 1896. Homonymous diplopia from partial paresis of the left abducens, sight good, fields perfect, no choked discs, though the retinal veins of the left side were enlarged.

May 22. No paresis; no enlargement of retinal veins.

September 24. No diplopia.

February 4, 1897. Paresis of one of the oblique muscles of the right eye.

The second operation was performed *February 28th*, 1897, by Dr. Kerr, assisted by Dr. Parker. An incision was made through the skin union of the previous operation. The dura was greatly adherent to the overlying structures, and separated with some difficulty and attended with considerable hæmorrhage, which was readily controlled. On opening the dura, there was an escape of cerebro-spinal fluid, and beneath the membrane was exposed a cyst bulging into the opening in the skull. Puncture of this gave exit to about two ounces of straw-colored fluid and a small amount of gelatinous looking matter. The cavity, which measured about two inches in depth, was thoroughly explored, but no growth found. It was thought perhaps this was the original cyst, but being of small size and deeply situated, escaped detection at the first operation, and, owing to the space left by the partial destruction of the lobe, it had enlarged and pushed forward to the surface. This view seemed plausible by the fact that there was a decided improvement in the symptoms immediately following the operation. The right pupil returned to its proper size; articulation was perfect; inco-ordination of the right hand remarkably improved, and patient became bright and cheerful, and manifested much interest in the result of the operation. The improvement, however, was only transitory, as on the following day the articulation was again indistinct and a slight ptosis of the left eyelid observed, together with frontal headaches and nausea; tongue heavily coated and breath very offensive; temperature 100°. From this time, there was a gradual deterioration, as evidenced by increase of mental sluggishness, difficulty of swallowing, paroxysmal coughing, continued fever, temperature fluctuating from 99° to 103°. Sometimes higher in the morning than in the evening, and *vice versa*. On the seventeenth day, the temperature dropped to 97.8°. On the eighteenth day, it was normal, and then gradually rose to 102° on the twenty-first day, when the patient died.

Bacteriological examination of cultures taken from the wound showed presence of staphylococcus, but no streptococcus.

Autopsy performed by Dr. D. S. Lamb, Pathologist Army Medical Museum, three hours after death, as follows:

"Examination limited to the head. On the inner surface of the left middle fossa of the skull was a broad, flat blood clot of somewhat recent date. Dura adherent to right cerebellar hemisphere so firmly that the latter was torn in removal; about half of the hemisphere had been removed by operation. Isthmus of cerebellum partly destroyed, probably by same operation. Left hemisphere contained large cyst cavity with thin hemisphere wall; in the floor of the cavity was a tumor the size of an almond. In the absence of any other examination of the body cavities, the cause of death would appear to be the cerebellar lesion. I am inclined to think that the large cerebellar cyst is a consequence of the removal of the cerebellar tissue by operation, since such cysts do form sometimes after removal or destruction of the brain tissue."

The microscopical examination, kindly made by Dr. Walter Reed, U. S. Army, Curator Army Medical Museum, shows the tumor to be a fibro sarcoma, and well supplied with blood vessels. The result of the autopsy clearly demonstrates that, even if the tumor had been discovered at the time of operation, owing to its deep situation and close proximity to the medulla, any attempt at removal would have been extremely hazardous.

The points worthy of remark about this case are:

1. Absence of distinct localizing symptoms.
2. The nature of growth and duration of the symptoms.
3. The decided improvement of locomotion and inco-ordination, although half of the right lobe was destroyed, and there was a chronic inflammatory condition of the middle lobe.
4. Explanation of the presence of the cyst of the left lobe, whether it existed at the time of the first operation or was formed subsequently, owing to the relief of pressure, or whether it is due to degeneration of tumor.

Though a microscopical examination was not made of the wall, its smooth and transparent structure would seem to contraindicate the latter. Williamson believes that the majority of cysts formed in the cerebellum are degenerated tumors, based upon examination of cysts which appeared to be simple; but careful microscopical examination showed in the wall a mass of new growth.

The presence of headache, causeless vomiting, optic neuritis, vertigo, and ataxia, point, to a very great degree of certainty, to the existence of cerebellar lesion; yet it is impossible, unless there be cranial nerve palsies, to differentiate cortical from subcortical neoplasm, nor have we any sign of positive value as to character or extent of primary growth. The headache, particularly if associated with tenderness, is suggestive, but it is frequently frontal, and

in this case was on the side opposite the lesion.

Optic neuritis is a very important sign, and is usually found in the majority of cases of cerebellar growth. Repeated examinations, however, showed its absence. Vertigo is also a valuable aid in forming a diagnosis, but it, too, is sometimes absent, and its presence in affections of other parts of the brain and internal ear disease must not be overlooked. Ataxia is the most characteristic symptom, and according to Nothnagel, is due to pressure upon or involvement of the vermis. Luciani denies this, but attributes the ataxia to irritation or destruction of the peduncles. Collins observes that lesion of the middle lobe is not attended by any special symptoms not found in involvement of other parts of the cerebellar lobes, while according to Sachs, inco-ordination is present in 80 per cent. of tumors involving the middle lobe, and only in 49 per cent. when the lateral lobes are affected. Finally, Bruns, from a study of four cases of his own and six of Oppenheim, Bernhardt, and others, concludes that disturbance of equilibrium, identical with so-called cerebellar ataxia, occurs very frequently in tumors of the frontal lobes. Can the inclination be relied upon in determining in which lobe the tumor is located? An analysis of twenty cases by Starr, in which staggering to one side was a prominent and constant symptom, shows that in sixteen cases the staggering was away from the side of lesion and four cases towards the side of lesion. Krauss has observed in thirty-five cases the proportion is greatly in favor of reeling towards the diseased side. According to Luciani, if the patient staggers away from lesion, the condition has been one of irritation of the peduncles; while if the staggering is towards the lesion, it is due to destruction of the middle peduncles. It is impossible to determine during life, from the symptoms in any given case, whether there is irritation or destruction. Therefore, no positive conclusion can be reached. The cerebellum, like other organs of the body, is liable to invasion by morbid growth, the most frequent varieties being tubercular, gummata, sarcoma, glioma and cysts.

The treatment of intercranial tumors in general is divided into medicinal and operative. Gummata, particularly in its early stages, before the occurrence of pachymeningitis and degeneration by cutting off the blood supply, are amenable to mercury and iodides.

Horsley and others have observed from the same treatment temporary abatement of the symptoms in glioma and other morbid growths, but are unable to explain its action. Bruns, Gowers and Oppenheim report spontaneous cure of intercranial tumors, but the occurrence is so rare as to make it of little importance. Horsley and Bruns consider that six weeks is sufficient limit for internal treatment, unless there is marked improvement, while Starr would extend it to three months.

The operative treatment of tumors of the cerebellum thus far has not been very successful. The obscure knowledge of the physiology, want of means of determining the nature and extent of growths, the inaccessibility of the ventral surface, limit the field and make the operation of necessity an exploratory one. Starr has collected sixteen cases with operations. In nine cases the tumor was not found; in two cases it was found, but could not be removed; in three cases it was removed and the patients recovered; in two it was removed and the patients died.

Collins and Brewer have recently reported a case of partial removal of a subcortical tumor of the cerebellum, and the patient suddenly expired two and a half months later during a second operation for complete extirpation.

In spite of the few successful cases of removal of cerebellar growths, the excellent results of Horsley, Knapp and others, who have operated in a number of instances solely for the relief of pressure symptoms, demonstrate that it is possible to prolong life in comparative comfort, since it would appear that our chief hope for palliative or radical relief lies in surgical interference.

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Proceedings of Societies, etc.

MEDICAL AND SURGICAL SOCIETY OF DISTRICT OF COLUMBIA.

Meeting of May 20th, 1897.

Dr. John F Moran read a paper on

Cerebellar Tumor; Two Exploratory Operations; Tumor Not Removed. Autopsy; Cyst and Fibro-Sarcomatous Tumor of the Left Lobe. [See p. 238].

DISCUSSION.

Dr. C. W. Richardson said the patient had been referred to him by Dr. Bishop for examination. He found that he had severe headaches, slight unsteady gait with vertigo, in which the movements were from right to left. He had double chronic middle ear catarrh. Bone conduction normal. Hearing $\frac{30}{40}$ in both ears. He had considerable hypertrophy of the middle turbinate, which pressed upon the septum in left nasal cavity; pressure upon the turbinate caused intensification of occipital pain. Dr. Bishop had considered the possible existence of cerebral or cerebellar lesion, and wished his advice with regard to the nasal and aural condition before coming to a positive conclusion. He said that the symptoms were not nearly so severe when he saw the patient as they were at the time that he was under Dr. Moran's observation.

Dr. C. L. Allen spoke of the desirability of giving a course of mercury and potassium iodide even when no evidence of specific infection could be obtained, and mentioned a case, seen at the clinic of Prof. Starr, where, in spite of the diagnosis of infiltrating glioma of the medulla, the patient had much improved under inunctions and iodide. He said, however, that, according to the experience of some observers, improvement takes place sometimes (at least temporarily) in non-syphilitic tumors under mercury and potassium iodide. The patient of whom he spoke had disappeared, and he could not say whether he had continued to improve.

Dr. F. B. Bishop said the case reported was under his care about one year, and until three months before seen by Dr. Moran. At the first visit he was stripped and carefully examined. Even at that early date there was abundant evidence of a lesion upon the left side of the cerebellum. There was intense pain in the sub-occipital region, coming on in paroxysms, accompanied by vomiting and dizziness, but no staggering. An examination of the eyes showed neither optic neuritis nor choked disk, but an astigmatism, which was remedied. The deep and superficial reflexes told a most interesting but terrible and fatal story. The deep reflexes slightly exaggerated on both sides; the superficial slightly exaggerated on the left side, entirely lost on the right. It is laid down as an axiom by Gowers, and Dr. Bishop's experience had certainly led him to believe that it is a true one, that exaggeration or absence of the reflexes may not be pathologic so long as they are absent or exaggerated alike on both sides; but absence of the deep reflexes on one side, while they are present on the other, is a *positive* indication of organic spinal disease, and an absence of abdominal or cremasteric r flexes on one side, while they are well marked on the other, is an indication of cerebral lesion. The latter symptoms, taken with the other symptoms, already mentioned, left no doubt of a cerebral or a cerebellar lesion. The patient also had some nasal trouble, and to complete the diagnosis by exclusion, or to be satisfied as to whether there was an error about the brain lesion, which would upset the diagnosis, he was sent to Dr. Richardson, who found some trouble with the turbinated bones, that caused this severe pain when touched. The question of ultimate operation was constantly in mind, and while he had been pretty severely criticised by some professional friends for not advising an operation at once, he did not do so for these reasons: 1st. We know that very large lesions can be present in the frontal and cerebellar lobes and produce very slight symptoms, or none of a localizing character; and 2d. Operations upon the cerebellum have not been so uniformly successful as to warrant one in operating unless the lesion could be positively located, or, at least, until the symptoms had become so severe as to demand operation for the relief of intracranial pressure.

Dr. Carr said physiology gives little help in locating cerebellar tumors. Usually there will be symptoms pointing to cerebellar tumor, but not to its exact location. Even in large tumors and abscesses of the cerebellum, it is well to remember that occasionally no symptoms of any kind develop. Starr has collected 141 cases of cerebellar tumor, and found that in only 6 per cent. would it have been possible to locate and remove the growth. Trephining should be done, however, for relief of pain, vomiting, optic neuritis, or any severe pressure symptoms. Exploration may be made, and the tumor removed at the same time, if possible. Trephining is a valuable palliative meas-

ure, and nearly always relieves pain and pressure symptoms. Mercury and potass. iodide should always be thoroughly tried before any operation is done.

Dr. Moran, in closing, said the report of the case clearly shows that supportive, specific and other measures, having failed after a thorough trial, surgical intervention was advised as a *dernier resort*, and was gladly welcomed by the patient and family, notwithstanding they were informed that no definite promise as to the result could be given. The decided relief of the symptoms and a year of comparative comfort would seem not only to have justified the operation, but rendered it imperative. We have no absolute reliable means of determining the location, nature and extent of the lesion; consequently the operation must, of necessity, in the majority of cases, be an exploratory one.

The case related by Dr. Allen was quite likely an infiltrating glioma. Horsley and others have observed marked improvement in this and other morbid growths from the use of iodides, but are unable to explain its action.

Book Notices.

Eye-Strain in Health and Disease. *With Special Reference to the Amelioration or Cure of Chronic Nervous Derangements Without the Aid of Drugs.* By AMBROSE L. RANNEY, A. M., M. D., Author of "Lectures on Nervous Diseases," "Applied Anatomy of the Nervous System," etc.; Late Professor of Nervous Diseases, Medical Department of University of Vermont, and of Anatomy of the Nervous System in New York Post-Graduate Medical School, etc. *Illustrated with 38 Wood Cuts.* Royal Octavo; pages viii—321. Extra Cloth, Beveled Edges, $2 net. The F. A. Davis Co., Publishers, 1914 and 1916 Cherry Street, Philadelphia; 117 W. Forty-Second Street, New York; 9 Lakeside Building, Chicago.

Each advance in medicine is more and more impressing the lesson of the ounce of prevention—that he is a too "one-ideaed doctor" who depends solely upon the knife or drugs to remove diseased conditions. As well pointed out by Dr. Ranney, there are to-day but few who ignore the relationship between eye-strain and functional neuroses—such as headache, neuralgia, sleeplessness, chorea, epilepsy, nervous prostration, insanity, etc., while beyond ten or twelve years ago, "this field was neither hinted at, nor discussed in any of the text-books." Years ago, however, Dr. Geo. S. Stevens, and after him numerous writers in journals especially, called attention to the causative relation of eye-sight disturbances and chorea and other nervous disorders, and common experience of general practitioners has many times since appeared to confirm the now common observation of specialists on this point. So that we have often wondered at the curious experience recorded by Dr. Sachs (*Treatise on Nerv. Dis. of Children*, page 113), who is "not convinced that nasal or *ocular* trouble, of which so much has been made of late, ever leads to true chorea." With reference to the treatment of the chronic nervous derangements above referred to due to eye-strain, in which amelioration or cure resulted in so many instances, Dr. Ranney insists "that none of the cases here reported took any drugs while under his care; that they were chronic cases which had received no benefits from medication under skillful hands; and that many of them were made absolutely well by eye-treatment alone." Such a record by one so able to observe as the author of the book should, under any circumstances, receive attentive consideration; although such a report as he gives, which seems unfortunately to exclude reference to cases of failure of amelioration or cure, might have the effect upon some of leading them to suppose that all cases of chronic nervous disorders not benefitted by the skillful ophthalmologist were *per se* incurable. Eye-strain is an important causative factor so generally of the class of disorders referred to by the author that special enquiry into it should never be neglected; but let not the general practitioner, nor even the specialist, suppose that all such cases have an etiological factor in eye-strain. It is simply a frequent, but not universal, cause of the chronic disorders spoken of. With this qualification, Dr. Ranney, in company with other specialists in eye and nervous diseases, has done an important service to medical science in giving book form to his experience and observations in the direction referred to. Perhaps a criticism of Dr. Ranney's style of book writing *for the profession* might be made that it is too dictatorial—that it is too much after the order of a school teacher to children in the simple positive assertions of "*do*" and "*don't*." Such style of dictation may be all right for the class room and to one's personal assistants in hospital or operation; but in writing a book intended for the profession at large, among whom some opposing experiences or lessons may occur, it would be better to be more persuasive than dictatorial. The Publishers, as usual, have done their part well.

Editorial.

Medical Society of Virginia.

Before the next issue of this journal, the Executive Committee of the Medical Society of Virginia will have issued the Announcement of the session, to begin August 31st, 1897, at Hot Springs, Bath county, Va. This Announcement, we are advised, will be exceedingly attractive, from a medical standpoint. The number of papers promised is satisfactory, and the ability of the authors generally is well recognized by the profession. A number of visitors, as fraternal delegates, etc., are expected, who will no doubt contribute also to the value of the session. Large accessions to the membership of the Society are expected. The Chesapeake & Ohio R. R. has made the liberal offer of *one fare for the round trip*, from all points along its line in West Virginia and Virginia, from Cincinnati, Washington, or Newport News. It is necessary, however, for each doctor going to the Society or to the meeting of the Medical Examining Board of Virginia, etc., to receive from the Secretary of the Society, Dr. Landon B. Edwards, Richmond, Va., a card of authority for the ticket agents at different stations to sell the round trip ticket. One of these card orders will be in each circular, to be issued July 31st. Liberal agreements are also expected from other railroads to connecting points on the C. & O. Railroad. It is an all-rail route directly to the Hot Springs, by way of Covington, Va. The Announcement in full will be published in the next issue of this journal.

Medical Examining Board of Virginia.

No one regrets more than we do that the enormous amount of work imposed upon the members of the Medical Examining Board of Virginia, by the examination of the over 1,200 papers—each requiring about three hours for its writing—has not allowed them to completely finish their work; hence the report is not yet ready for publication. We may assure all interested parties, however, that the Examiners are all faithfully and ably working to relieve anxieties, and the report in full will appear in the next regular issue of this journal.

Medical and Surgical History of Virginia.

Several years ago, Dr. Joseph Price, of Philadelphia, offered a prize of $100 to the Fellow of the Medical Society of Virginia (of which he is an Honorary Fellow) who would give, at the succeeding annual session, a worthy medical and surgical history of his native State. As no suitable paper was offered, Dr. Herbert M. Nash, of Norfolk, Va., also an Honorary Fellow of the Society, offered an additional $100—making $200 in all—for a worthy history to be presented at the next session; but the Committee of Examination did not deem any of the papers presented entitled to the prize. Then these two gentlemen increased their offers to $150 each (or $300 in all), but at the next session the report of the committee was the same. At the last annual session, Dr. Price authorized an increase of his part of the offer to $200, and Dr. Nash continues his part of $150. Dr. Hunter McGuire (also an Honorary Fellow), who for many years has been giving a prize of $100 for suitable essays on subjects announced, decided to discontinue for a time his special prize essay offers, and add $100 to the offer of Drs. Price and Nash—thus making the total prize $450 for a suitable Medical and Surgical History of Virginia—to be awarded during the session of the Medical Society of Virginia, to be held at Hot Springs August 31, September 1st, 1897.

In order that the committee appointed may have time to read the *Histories* that may be offered in competition, it has been decided that each competitor must have his type-written paper in the hands of the Secretary of the Society, Dr. Landon B. Edwards, Richmond, Va., on or before August 14, 1897.

"Essays in competition must be neatly type-written or printed, signed by a *nom de plume*, with a correspondingly signed but sealed envelope attached, containing the full name and address of the author." "All essays sent in competition—whether successful or not—are hereafter to be considered to be the property of the Medical Society of Virginia." We hear that several writers, now thoroughly appreciating the want, are about completing their papers, from which, no doubt, some valuable medical and surgical history of Virginia may be gathered. It is not intended to limit the length of manuscript; only let us have history.

Colorado's Promised Contribution to the Rush Monument Made Good.

During the recent session of the American Medical Association, Dr. Graham pledged $2,000 as the contribution of Colorado doctors to the Rush Monument fund. During the session of the Colorado State Society, last month, the full sum pledged was promptly raised by individual subscriptions.

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Original Communications.

CHRONIC PULMONARY TUBERCULOSIS.

Its Clinical Course and Symptomatology.

By KARL VON RUCK, B. S., M. D., Asheville, N. C.

[CONTINUED FROM PAGE 224, JULY 23D, 1897.]

In the clinical course of the disease, we can, as a rule, *distinguish between the fibroid form* in which productive inflammation, with formation of connective tissue and fibroid induration predominates, *and the exudative catarrhal form*, in which the inflammation is characterized by interstitial, round cell (leucocytal) infiltration, accompanied by catarrhal desquamative processes in the air spaces,the whole tending to more or less rapid caseation.

Obviously, the former pursues the more favorable course; and while it exists in a pure form, and is confined to a limited area, the symptoms may be slight, and the general health of the patient may not be materially impaired.

The newly-formed connective tissues enclose the tubercle, and the cellular elements of the tubercle itself, being derived from the local connective tissue, may also become organized and fibroid degeneration may result.

After the interstitial proliferation has ceased, the newly-formed tissue contracts; the tubercles are within the indurated area, in which they undergo atrophy from pressure, and can eventually disappear entirely; the process resulting in a cure.

When, however, large tubercular nodules and aggregations are enclosed in the fibroid area, they frequently appear to break down, probably as a result of the toxic action of the contained tubercle bacilli, which, even if dead, may, like some other dead pathogenic micro-organisms, cause aseptic suppuration, an occurrence which has been frequently observed in the experimental injection of dead tubercle bacilli; thus a cavity is eventually formed, which, after its discharge, is liable to become infected with other pathogenic germs.

Patients with such lesions may nevertheless recuperate promptly and fully after the cavity is discharged, and if the latter is small, it may become obliterated through further contraction of the fibroid enclosure. Or the cavity remaining open, the walls may become smooth, and secretion may cease entirely; in this maner, a final arrestment or cure of the disease may still occur.

Under such a course, the patient presents active symptoms of fever, cough and expectoration, etc., only during the formation and subsequent discharge of the cavity; and unless mixed infection takes place in the cavity, and particularly in adjacent tissues, the previous state of health is regained.

The tubercle bacilli are, however, not, as a rule, all dead in the softened and disintegrated mass; and with its liquefaction and outward discharge, and with the free access of air to the walls of the cavity, they obtain again the conditions which are favorable to their growth and multiplication.

It is a well known fact that, although tubercle bacilli are frequently missed in the caseous centre, they are usually found upon the periphery; and since the peripheral portion of a caseous mass necessarily forms the wall of the subsequent cavity, the germs may grow there, and may hinder its healing for a long time, during which they are found in the discharged sputum.

From such softened centres, the tubercle bacilli are liberated, and may enter the circulation through the blood and lymph streams, giving rise to distant eruption of tubercle, especially in the opposite apex; or local extension of the disease takes place from infection of contiguous healthy lung, the secretions of the cavity gravitating, or being forced by the cough into the bronchioles and alveoli.

If such secretions contain other pathogenic germs, acute inflammation in the involved bronchi follows, and when the alveoli become

also involved, the interstitial infiltration with leucocytes occurs, usually with more or less distinct chills, or chilly sensations, and with a marked rise of temperature.

The exudative catarrhal pneumonia is thus established. But owing to the slow growth of the tubercle bacilli and the time necessary for the formation of the tubercle, the latter are found interspersed in the infiltrated parts only after the lapse of several or more weeks

From now on, we have the fibroid form and exudative form of pulmonary tuberculosis, combined in the same patient, and in the future course one or the other usually predominates.

When the exudative inflammation appears to have been present from the beginning, its occurrence has been attributed to a peculiar tendency of the tissues of the locality, or of the particular organism, to take on this form, rather than the productive variety.

It should, however, be considered as at least equally probable, that, in case of eruption of tubercle in the acini and alveolar walls, the resulting alveolar exudate may become infected, by incidental inflammation extending inward from the bronchi to the acini in connection with grippe or with bronchitis, due to cold and exposure; and that the interstitial infiltration with leucocytes occurs as a rule only with mixed infection.

The well marked cases which are frequently described as caseous pneumonia, and if rapidly progressive, as acute phthisis, are easily distinguished from the fibroid form by their higher temperature, by the rapidity with which destructive changes take place in the involved area, and with which the disease extends to other parts.

Still, there are cases in which this process is more circumscribed, in which the round cell infiltration is partially or entirely absorbed, or in which more or less connective tissue formation is associated, by which the extension of the disease becomes limited.

In such cases, the symptoms are less severe, and approach those of the fibroid or mixed form; and instances present themselves in practice of which no anatomical classification is possible.

In its course, the exudative, catarrhal form of pulmonary tuberculosis gives rise more frequently to acute pleurisy with effusion, while, with the fibroid form, pleural inflammation is less frequent; and when it occurs, it is more often of the dry, or circumscribed variety. In the former, the tubercular disease extends also more frequently and earlier to the larynx and to other more distant organs, and general or localized miliary tubercular eruptions are more frequently observed.

The more it predominates, the more rapid is the unfavorable progress of the patient.

The much greater proportion of arrestment and apparent recoveries which I have seen have been in cases in which the productive form of inflammation was well marked, or in which the exudative pneumonic process was limited to a small area.

The question of so-called mixed infection is in part solved in these exudative, catarrhal processes which are undoubtedly due to the presence of other pathogenic micro-organisms than the tubercle bacillus; under favorable conditions, they appear to invade tubercular or healthy lung portions, probably in the manner mentioned above.

But streptococci, staphylococci, or the pneumococci of Fränkel and of Friedlander are quite often found in the expectoration, especially in that from cavities without the presence of acute, inflammatory changes in the lung, and in cases which pursue a normal, or nearly normal, temperature, while the patient is improving in all respects.

The more distinctly septic symptoms appear usually in the period of extensive, destructive changes, and with prolonged suppuration of cavities, and occasionally in connection with retention of purulent secretions; then we may observe severe rigors and high rises of temperature, with more or less distinct remission or intermission, during which the patient sweats profusely.

Apart from these cases, the advanced stages of the progressive disease are frequently attended with more regularly recurring chills or chilly sensations which precede the rise of temperature, and occur usually at about the same hour, before noon.

With the exudative variety the formation of large cavities is characteristic; and by their rapid enlargement the pleural surface is more frequently reached before adhesive pleurisy has occurred, so as to prevent rupture from the increased pressure during cough.

Pneumothorax occurs most frequently with this (the exudative form), and rarely with the strictly fibroid form. If, in the latter, cavities are formed, they are usually small and enclosed in a firm wall, and firm adhesions of the pleural layers result during the slower formation.

Small pulmonary cavities and bronchial dilatations are thus characteristic of the fibroid form.

Pneumothorax may be partial or complete. When limited and circumscribed by pleural

adhesion it is often overlooked; and if not extensive, it may not cause any characteristic, subjective symptoms, excepting those of pleurisy.

But without pleural adhesions to materially limit the size, cases occur in which the perforation into the pleural sac is very small.

Under favorable conditions such a small opening can become obliterated by partial compression of the lung, that no further air passes through; and time may thus be given for inflammatory changes to cause its permanent closure. Such cases are also liable to be mistaken for simple pleurisy. I have seen several in which but a moderate amount of air entered the pleural sac; there was no marked dyspnœa while at rest, and the shortness of breath present could have been easily explained by the pleural inflammation. The relation of one such case may be of interest.*

Circumscribed pneumo thorax is the more liable to be overlooked, the smaller it is, and in many cases it may not be distinguishable from a large cavity except by the abrupt occurrence or extension of the physical signs, to recognize which we must be familiar with the local condition from frequent observations before the accident.

When complete, and if the opening is large, so that the air, entering freely, can also pass out readily, the distension of the chest and displacement of viscera does not become as extreme as it does when a valve-like opening, though admitting air, does not allow of its escape.

The dyspnœa, in the latter case, becomes rapidly extreme; if the left side is involved the heart and mediastinum are pushed well into the right side, the diaphragm is pushed down below the false ribs, and the patient usually dies in collapse in a few hours.

Abruptly occurring pain of a very sharp character, and the sudden appearance of dyspnœa, are the two important subjective symptoms of pneumo-thorax, and should always lead to a careful physical examination of the chest.

Many times the patient states he has felt something give way at the point where the pain was first experienced.

When the perforation occurs in a far advanced state, when the entire lung is greatly diseased throughout, the symptoms come on more gradually.

I have seen such patients complain but little of dyspnœa when perfectly at rest.

In most cases symptoms on the part of the circulation occur quickly; and in rapidly failing cases the pulse becomes very small, irregular and frequent; more or less pronounced collapse appears in proportion to the dyspnœa, the acuteness of the pain, and the cardiac displacement; the extremities become cold, the lips and finger nails become of a bluish hue, the body, especially the face and extremities, is bathed in cold sweat.

In almost all cases, the occurrence of complete pneumo-thorax marks the beginning of the end; about half of all the cases which I have seen died either within a few hours or in the course of a few days or weeks. The others, though partially recovered, pursued a more rapidly adverse course thereafter, and died within a few months; and but comparatively few lived over a year.

The favorable termination of which some authors speak, and in which, under the formation of an effusion the air was absorbed, and the exudate was next absorbed, so that the lung again expanded, while its temporary compression caused the arrest of the tubercular disease, it has not been my good fortune to witness.

Such a termination is conceivable only when

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* Mrs. B. M. had been under my care for several months. Her clinical history presented nothing unusual, and was that of the exudative, catarrhal form of the disease, pursuing a sub-acute course, with extensive caseous changes in the left lung, and recent tubercular eruption in the right upper lobe.

Nothing abnormal was noted at the base of the left lung; percussion and auscultation gave normal results below the lower angle of the scapula and the sixth rib, in the axillary line, three days before the accident.

Then she experienced a sudden acute pain in the left axilla, extending quickly over the lower portion of the same side, which was relieved by one-half grain of morphia, hypodermically; but the shortness of breath which came with the pain continued.

Examination within twenty minutes after the first occurrence of pain showed tympanitic resonance to the nipple in front, and well up into the axilla, and to the middle of the scapula posterior. The heart was slightly displaced to the right. Auscultation revealed entire absence of the respiratory murmur in the lower portion, and in the upper limits of the tympanitic area its character was distant, soft and amorphic

A beginning effusion was made out the following day, which gradually increased; on the second day I obtained exquisite succussion phenomena. After the fourth day the tympanic note over the fluid was absent; and the respiration was again distinctly audible at the level with the lower angle of the scapula, to which the liquid exudate now extended; the heart had returned to the normal position.

On the seventh day, when the fluid reached to the middle of the scapula and dyspnœa became again marked, two quarts of a thin sero-purulent fluid were aspirated, the lung expanding and following the level of the fluid. Without entering into the details of the subsequent course, the point I wish to make is, that but for the physical examination which gave characteristic symptoms during the first and second days, the case could have easily passed as one of acute pleurisy.

pneumo-thorax occurs in a very early stage of the disease, as sometimes happens, and when no infectious material enters the pleural sac.

All my cases were in the advanced stage; and those who lived several months or longer, required removal of the exudate which was always purulent.

If death occurs early, the contents of the pleural cavity are chiefly serous and cloudy; the escaped cavity contents could be distinctly recognized in several of my cases, and in one case in particular, muco-purulent sputum in considerable quantity could be seen swimming on the surface of the liquid. If a sufficiently large vessel has been torn with the rupture, the exudate may be bloody; in one of my cases almost a quart of pure blood was found.

According to the character of the exudate, we may distinguish between hydro-pneumothorax, pyo-pneumothorax and hæmo-pneumothorax; but in connection with pulmonary tuberculosis these distinctions are unimportant, because usually infectious material escapes into the pleural cavity and the exudate becomes purulent, if the patient survives long enough.

The frequency of pneumothorax in pulmonary tuberculosis is variously estimated. Powell has observed it in 5 per cent., while my records show only between 1 and 2 per cent., including also the partial form.

The occurrence of *pleurisy* in the course of pulmonary tuberculosis, although usually classed with the complications, is so constantly observed in all cases, that it may be considered with the symptoms. This is especially true of the circumscribed form; and few patients progress in their lung affection without suffering from one or more attacks.

Pleurisy is often the first evidence of a tubercular process within the chest; and if not from the lung itself, the inflammation extends from tubercular bronchial or mediastinal glands.

The inflammation in a tubercular deposit is not necessarily produced by the tubercle bacillus; more frequently it appears to be caused by other pathogenic germs. In practice it is difficult or impossible to determine the cause which excited the inflammation; and microscopical examination of the exudate, if one is formed and removed, rarely gives sufficient light to make our conclusions certain.

I believe that the pleurisies which precede the recognizable lung disease, by many months or years, are extensions of inflammation in tubercular glands; and this probably is also true with so-called idiopathic pleurisies in which the lung escapes entirely.

The extension of the tubercular process to the lung may occur with the pleurisy, tubercle bacilli being deposited both within the lung and in the pleura at the same time; or if the tubercle bacillus has invaded the pleura from a gland, it may later reach the lung from the pleural surface.

In most cases, however, the preceding pleurisy is not caused by the tubercle bacillus directly; and the subsequent lung affection occurs through liberation of the germ from a centre outside the lung which may or may not be the one from which the pleurisy originated.

A case in which the latter course was the probable one, was that of Mrs. M., who in 1883, at the age of 22, was treated by me for pleurisy on the right side. The pleurisy was attended by a fibrino-serous exudate, about two quarts of which were aspirated the later part of the fourth week.

The lung expanded, and repeated examinations after her recovery and prior to the spring of 1887, showed both lungs entirely normal. Then the left apex became involved in a tubercular process; but the patient recovered, and has remained well since, the right lung never giving any evidence of disease.

The pleural inflammation which arises in the course of the established lung disease may be acute or chronic, circumscribed or diffused, dry or exudative; and the exudate may be fibrino-serous, purulent or hæmorrhagic.

The acute forms are diffused and accompanied with a liquid exudate more frequently than the chronic form; and all forms of pleurisies are more frequent with the exudative, catarrhal form of phthisis, than with the fibroid variety.

Most frequent in occurrence is the circumscribed inflammation, with a fibrinous exudate, through which adhesions are quickly established with the opposite pleural surface.

This form is due to the extension of inflammatory changes from the adjacent lung tissue, the seat of pneumonic or caseous processes; or of recent excavation; or in which there is a subpleural eruption of tubercle, the reactive, inflammatory changes from which have extended to the pleura. It does not exert any particular influence upon the lung disease, but in some instances it is conservative; by preventing perforation.

The circumscribed character must, however, not be assumed by the limited area of pain, but must be determined by physical examination, showing evidences of the limitation, and when the pleurisy is interlobular, by the absence of all physical evidence The opinion may be confirmed by the absence of rise of or

increase of temperature, and eventually by the quick subsidence of symptoms.

The pain, though usually quite sharp, stitch-like or piercing, is at times of a dull or sore character; it occurs with inspiration, with coughing or laughing, and often with change in the position of the chest, or on turning in bed.

The respiration is short in proportion as the pain is felt in the earlier or later portion of the inspiratory movement; in some cases the pain is located by the patient at a distance from the locality where we observe pleuritic friction or tenderness on external pressure. The cough may be increased but slightly, or not at all.

Mild cases of this form are often mistaken for intercostal neuralgia, or for muscular rheumatism.

Under appropriate treatment, and often without it, the pain disappears within a day or two, so that it is not felt except during cough or deep inspiration, and in a few days more it disappears entirely.

Yet it is frequently followed by a recurrence in the same locality, or in its immediate vicinity, or by the involvement of a new area, usually in the lower lobe, immediately below the pleuritic spot.

More general involvement of the pleura frequently occurs from extension of the circumscribed form; or the inflammation extends rapidly from the beginning.

In the extending dry forms—that is, when the exudate is fibrinous—the symptoms are less severe, and it is especially liable to follow a tedious and chronic course; under which the entire pleural surface may become adherent and the pleura becomes much thickened.

In such cases the pain is more frequently dull, and is not so much influenced by the movement of the chest in respiration; the accompanying fever is moderate, and in some cases very slight, so that it is often difficult to say in how far it may be due to the pleurisy or to the pathological changes within the lung. I have seen such cases without any elevation of temperature whatever.

With the acute forms in which a liquid exudate forms quickly, all the symptoms are more severe; chill or chilly sensations may precede the rapid rise of temperature, which on the first day reaches 102° to 104° F, and in very acute cases even 105° and over.

In part, at least, the chill and high temperature may be due to the frequently present pneumonic process from which the pleural inflammation is an extension. The pain may radiate all over the affected side, and to the opposite side; often it extends to the shoulder and into the abdomen; and the great shortness of breath makes one think of pneumothorax.

When the pain is, however, relieved by full doses of morphia, the breathing becomes quiet and regular, until dyspnœa from compression of the lung by the exudate makes its appearance.

The temperature is continuous, and remains high for the first and second weeks, and the pulse is increased in proportion to the fever. Cough becomes more severe, probably on account of inflammation in the lung.

The patient lies first on the well side to avoid the pain from pressure; later, as the exudate increases, and the opposite lung assumes more and more the function of respiration, the patient breathes easier by lying on the affected side, and at that time the pain has either greatly subsided or has disappeared entirely.

When the exudate fills the greater part of the affected side, the patient assumes a sitting position in bed, in which the liquid distends the lower portion of the chest wall and presses the diaphragm downward, allowing more room for expansion of the partially compressed lung.

If the left side is affected, urgent symptoms of displacement of the heart and great vessels may eventually appear, which compel the mechanical removal of the exudate; but at the present time, few cases, if any, are allowed to drift into such a condition in which the patient's life is in immediate danger.

The inflammation may cease at any stage, but in most cases the liquid exudate becomes appreciable, and usually reaches to the sixth or fifth rib before it becomes stationary.

The temperature then declines; and with the absorption of the exudate it reaches the normal during the morning hours, again to rise to 101 or 102 toward evening.

Ordinarily it takes a month or more before the absorption is complete, more or less thickened, fibrinous residue being left to become organized, and to form firm adhesions with the costal surface.

If aspirated before the inflammation has subsided, increased inflammation often occurs, and the exudate may be reproduced in a few days.

With purulent exudates septic symptoms in the form of chills and greater variations of temperature and night-sweats occur and continue until its removal, when, if the inflammation has subsided, the symptoms disappear.

Hæmorrhagic exudates are rare; they are supposed to be characteristic of tuberculosis of the pleura.

The fibrino-serous exudate is the usual one observed in the course of the pulmonary disease.

In some cases exudate pleurisy comes on more insidiously, and in rarer instances without any symptoms, except those caused by pressure from the liquid—cases having been observed where even the temperature remained normal; but in all my cases in which there was neither pain nor cough, there was more or less fever.

In neglected cases the lung remains permanently compressed; frequently the fluid has become purulent. Erosion and perforation of the lung with discharge into a bronchus may occur, and in rare instances, perforation through an intercostal space may take place.

Pleurisy with liquid exudation, whether acute or chronic, and, though managed most skillfully, has always an unfavorable influence upon the future course of the lung disease. The nutrition of the patient suffers during its existence in proportion to the acuteness and severity of the attack.

Purulent exudates are often exceedingly obstinate to even the most painstaking surgical treatment, and the long suppuration becomes then a severe drain upon the already exhausted patient.

[TO BE CONTINUED.]

REMINISCENCES--MEDICAL AND HYGIENIC--OF THE ARCTIC.

By FRANCIS SMITH NASH, M. D., Washington, D. C.,
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Having recently been consulted by some medical friends going as surgeons of Arctic expeditions, and others who seem, even at a great distance, to have become infected with the "yellow fever of the North," at present endemic in the Klondyke Valley, I think a short article from one who has twice been within the circle might be of interest to some of your readers.

I was first sent as surgeon of the U. S. S. "Alert," one of the Greely relief ships, in 1884, and ordered, before going, to find out all facts of medical value obtainable. After wading through several thousand pages of explorations, I was surprised to find that, with the exception of scurvy and frost-bites, there was almost nothing.

In 1885, I was ordered on the Northern Alaska exploring expedition, and we remained twenty-two months in that inhospitable clime, spending a pleasant winter at Fort Cosmos, about two hundred miles to the northwest of Klondyke.

A very careful search in the Army Medical Museum reveals that, with the exception of an article published in 1852 by Dr. Vreelaud, U. S. N., one by Fleet Surgeon E. S. Green, U. S. N., in 1884, and one in French by Dr. Couteaud, who made numerous experiments on a voyage of "La Manche" to the island of Jean Mayen and Spitzbergen, nothing deserving the name has ever been published, presumably because, with the exception of scurvy, constipation and frost-bite, nothing else takes a very decided local coloring.

Dr. Couteaud's article, entitled "Bactériologie de la Zone Glaciale," states that in the air he found sarcina lutea; in the water, micrococcus et bacterium aqualis, torula and bacterium termo; in the soil, leptothrix. He found no pathogenic germs in any of them, and remarks on "the extraordinary purity of the air, water and soil," and concludes by saying: "The bacilliary forms are not there at all, or so little as not to count, and pathological species are completely wanting." The statements are, of course, intended to relate to the earth, air and water of the Great White North, and do not apply to germs which may be carried there and cultivated in the warm quarters and bodies of the carriers. It is, however, a very interesting fact that one of Greely's men, who had been frosted, and whose tibiæ and fibulæ projected for more than an inch below the scar tissue, having a dark brown color as of dried bone, presented no signs of pus formation, although he had been confined for months to his sleeping-bag, in which he, from necessity, had passed his excretions. One would think that the pus germs would have been furnished by his skin; however this may be, they were not there.

As the trend of modern thought seems to be to ascribe scurvy to a germ origin, I will place it here; although, from a practical standpoint, Vreelaud has the advantage, and I will quote him extensively, being convinced that, notwithstanding its comparative rarity at the present time, there will be many sufferers from it among our countrymen who are madly rushing by the thousands to the gold fields of Alaska. He ascribes it to "a long absence from solar light, a diet without change or variety, want of proper exciting exercises, personal uncleanliness, dreary monotony, and consequent depression of spirits."

"The symptoms were generally uniform, al-

most always the first change noticed being a peculiar white arch on the gums at the root of one or more of the incisor teeth in either jaw, followed in a few days by sponginess, lividity, ulceration and bleeding. Subsequently the lower extremities would become painful, swollen, indurated, and discolored by ecchymosis. Sometimes the legs would have the appearances above described at the same time that the gums continued perfectly healthy. Irritation of the rectum, with frequent, small, slimy and bloody stools, accompanied by pain and tenesmus, was also frequent."

The value of a varied diet of modern preserved fruits, vegetables and lime juice for this condition I only mention, although, in my report to the Surgeon-General of the Navy, I stated that "as good antiscorbutic results can be more pleasantly obtained by subsequent parties going into the Arctic taking a ration of weak domestic wines and malt liquors."

The Arctic is singularly free from diseases, and the entire problem, so far as we Anglo-Saxons are concerned, of maintaining life and even a high degree of health, practically resolves itself into the great first principle of animal existence, *i. e.*, food supply.

Diseases reported to have existed in the Arctic are: pneumonia, scurvy, bronchial and rheumatic affections, relapses of malarial fever, conjunctivitis, urticaria, hæmorrhoids, tuberculosis, coryza, neuralgia, cellulitis, chilblains, superficial frost-bites, constipation, starvation, and syphilis. This last is the curse of the poor Eskimo, introduced by the whites, of course.

An examination of authorities shows that in Iceland, through the northern part of which the circle passes, and consequently which has an Arctic climate, epidemics of typhus, typhoid, cerebro-spinal meningitis, diphtheria, influenza, small pox, measles, etc., have been reported. That this should be so is due to the warm houses, and shows that almost any disease may flourish when the necessary artificial heat is supplied for its growth.

The Innuits (Eskimos) do not have many children, although their devotion to those they have is very great, and appear to suffer very little pain comparatively during childbirth. On one of our sledging expeditions, a woman's hour came upon her, and two men dug a hole in a snow-bank and placed a bear skin on the bottom and one over the opening, and she was left by herself. That night, she came into camp, carrying her child on her back and the two skins on her arm, and continued daily to walk fifteen or twenty miles, carrying her child on her back, as it would have been bad luck to have ridden on a sledge, while her uterus underwent involution.

When a girl's menses appear, she is put, in Alaska, off in a small house, rudely constructed (in summer) of boughs, and there exposed to the rain and changeable weather, and is fed by placing food near her, which she comes out and gets. No one will touch her or anything she touches, and she is regarded as unclean. This isolation may continue for months. When the menstrual flow is too excessive, they will sometimes plug the vagina with grass, which they renew during the day. They never bathe, not even the young infant or the mother. The child passes its excretions on the naked back of the mother, the more solid parts being wiped off with the finger on some grass, and that is the extent of cleaning.

Chastity is almost unknown among them, and they have no marriage rights. They practice polygamy, and if a man is going on a trip and his wife is not equal to the journey, he will frequently trade wives with a friend for the time. In Greenland, in some cases, presents are made to the parents, and after a year, if the girl finds that marriage has been a failure, and there are no children, she can return home and call the thing off.

Among the Eskimos, the "shaman" or native doctor is held in high esteem, and they have little or no faith in white men's methods; and when we think of his hideous masks and dreadful incantations, it is not strange that the impressions they produce on the ignorant, superstitious mind of the savage are not easily removed. The position of the "medicine man" is lucrative and commanding, and the natives have great confidence in his supernatural abilities. I once saw one go through his semi-hysterical groans and contortions, he having previously stated that he would make a crow come out of his body and caw from his mouth. There appeared at the proper time the bill of a crow, which appeared to do as he said, and when I forced it from between his teeth, they all predicted my sudden death for being guilty of such profanation. In a few minutes I returned it to him, and although carefully watched before its appearance in his mouth and after I had replaced it in his mouth, he was not detected, and a careful search of his clothes failed to discover it afterwards, he insisting that it had returned into his body.

"Southeastern Alaska is noted for its mineral springs, and there is scarcely an island but has one or more. On Baranoff Island there are four, the most important of which is situated on the western shore, about eighteen miles

south of Sitka. These springs, both hot and cold, are strongly impregnated with sulphur, iron, or magnesia, and some contain varying proportions of each. During the Russian occupation of the country, a hospital under the charge of the army was located at this place, and not only were soldiers treated there, but citizens were allowed free use of the waters. The medical officer stationed at Sitka made semi-weekly trips to the springs. and it is said that, in most cases, no medicine other than the waters was used. People from all parts of the territory went there for treatment, and wonderful cures are related by men whose word is beyond question. The place is still resorted to by patients afflicted with rheumatism and venereal diseases, and, from my own observation, I am forced to believe that benefit results from the use of these waters."—*Official Report of C. W. Rush, U. S. Navy.*

There are few elements in Arctic life more over-rated as being excessively dangerous than the cold. I shall long recall as a delightful memory the bracing, buoyant autumn I spent in northern Alaska. We had extremely low temperature during the winter, but one does not suffer as much as would be imagined, as it is a dry, still cold. Any motion of the air causes it to be insufferable, and during a blizzard, if an Eskimo is caught on a sledging trip, he digs a hole in a snow bank and stays there until the wind subsides. I have seen more frost-bites, and of a more serious nature, in Washington as results from exposure during a "drunk" than I ever saw in the north. A writer states that, "on the very coldest night of winter, we sat on deck viewing and applauding representations, in which female characters appeared on the stage with bare necks and arms, when the thermometer was at 46° below zero."

It is a difficult matter to severely freeze an intelligent, well-nourished animal. Superficial frostings on the superciliary ridges, cheeks, noses and chins are very common, but unimportant. No man is quite fool enough to undertake to thaw a frozen nose with snow at a temperature of minus forty degrees. He surrounds it with his warm fingers, and takes a deep inspiration through the mouth, and expires through the nose. One gets accustomed to the low temperature, and, being warmly clad, cares little for it. The climate of Klondyke resembles, in many particulars, the Dakotas and Minnesota.

The clothing of our men consisted of heavy red flannel underwear, blue overshirts, woolen socks, leather boots, heavy woolen trousers, and pea-jackets for summer. In the winter, artecgays, a loose shirt of doubled reindeer skin, protecting the head, face and body, extending nearly to the knees, and reindeer trousers were worn over the summer clothing. For keeping the feet at a proper temperature, a thick sock of reindeer skin was worn over the woolen sock, and the native sealskin boot substituted for the leather covering. The skin clothing was only used out-of-doors.

Sledging parties carried sleeping bags and an extra pair of socks. The mit, with only the thumb separated from the remainder of the hand, was found to be most useful for general work under exposure to continued cold. In the spring, goggles of colored glass were worn, and no snow-blindness resulted from the glare. The natives make a fairly serviceable ice-goggle from a double concaved piece of wood with a small slit in the deepest part of the concavity; with one of these for each eye, united by a string across the bridge of the nose and tied behind the head, they keep out a great deal of the glare and do not suffer from snow-blindness. Of course, the twilights are long, both morning and evening, and the diffused light, failing to cast "lights and shadows," sometimes makes walking uneven, as the eye does not quickly detect depressions or elevations of moderate size.

Care must be exercised about sleeping, the continuous sun, without well defined division of night and day, causing negligence in that particular.

As a protection from mosquitoes, masks were used. These were made of thick cotton cloth, supported on the head by a frame work, and the front covered with wire-gauze, having openings for the mouth and eyes, which were protected by a lid. These were found to be very efficacious, but too warm, and the odor of the brass wire was disagreeable.

The tenacity with which Arctic animals hold on to life is suggestive of the "nine lives of a cat." Greely speaks of a hare that had its legs broken and entrails trailing in the snow, fleeing a considerable distance, and only falling dead after having gone several miles. It has three times been reported to the Smithsonian that a small fish living in tundra can be frozen, remain frozen for months, and then thawed out and be again alive. I could not do this with the only two fish I could get for the experiment, but it was seen by one of our officers, and was a matter of common belief among the Innuits.

It is interesting to know that *red* snow in the Arctic is not unusual; this is due to the growth

of a minute organism, the protococaus nivalis, on the surface of old snow, which is too small to be itself seen by the unaided eye, and thus gives its color to the snow. This is often found in the Alps of Southern Europe.

The Eskimos themselves are a peaceful, gentle people, living principally on the products of the sea and rivers. They are all great gossips and very hospitable. They are nomadic, and rarely inhabit the same house two winters in succession, and in summer lead a tent life. They have suffered from severe epidemics of small-pox, which has depopulated entire islands. The Eskimo crawls into his house on his hands and knees through a tunnel about ten or fifteen feet long. Both ends of the tunnel have a skin (usually bear) as a door. The fire is made in the centre of the single room house, and the smoke escapes through a square opening in the top; there is no chimney.

They can and do raise the atmosphere and smoke of this room to 90° F. or 100° F., and then pull a seal's bladder over the opening and all hands go to sleep, until some one is aroused by the temperature having fallen some hours afterwards to 32°, when the fire must again be renewed. They have no idea of time, and, like animals, do much prowling.

They are unclean in the extreme and never bathe; the two things most dreaded by them are wind and water, because of the danger of freezing.

Dogs, children and people eat out of the same vessels, which are rarely or never cleaned in Alaska. In Siberia, they pass around the common dish that has contained the meal, and all hands—men, boys, women and girls—are expected to empty their bladders into it to get the grease out of it, as they have no soap.

They eat almost anything, from a louse to a reindeer, in Siberia, and in Alaska, from fish so putrid that it could not be endured by us at a distance to a nice piece of roasted dog. The latter, although a little tough, is not badly flavored.

They catch, in most of the Arctic countries, large quantities of salmon, disembowel them, and then, passing the knife down either side of the back, leave the fish hanging together in three pieces over a stick, and then dry them in the hot summer sun, reminding one of the tobacco fields of Virginia. Those caught later in the fall are frozen, and kept frozen until eaten.

The surface of the earth is covered with vegetation; pine trees grow in large numbers in the valleys from one to two feet in diameter. The garlic of our Virginia fields grows wild and is an excellent article of food; violets are found in large beds, and a species of wild rose, similar, if not identical, with our own, is frequently found. The rivers contain large quantities of fish, particularly salmon (the canning industry of which is very extensive and remunerative), and the country abounds in the nests of gaily plumaged warblers, ducks, geese, swan, etc. The moose and caribon are rapidly becoming scarce; the same is true of the fox, bear, lynx, and other fur bearing animals. Reindeer have recently been introduced, but with only moderate success. Various forms of flies, moths, butterflies, etc., are found. All Eskimos enjoy pediculi vestimentorum. The mosquito is one of the most serious plagues of the Arctic.

How the country and its people will be rapidly changed by an influx of adventurous, aggressive whites, with their vices, can be readily imagined. The present gold craze in Alaska will probably do as much as the rush of 1849 in settling California, and, although on a smaller scale, we can justly anticipate a fairly thick settlement of its present barren wastes, which can doubtless, under Yankee ingenuity and industry, be made to produce as much as corresponding regions of Europe. Other mines than gold may exist there, for magnificent coal beds, from which are yearly taken quantities of surface coal, and indications of oil are found in its northern part. While it is not a land flowing with milk and honey, it is far different from what one usually imagines.

If I were asked to enumerate the things most to be dreaded in this modern El Dorado, I should name them in the following order:—Want of food, the darkness, solitude, the wind, cold, and snow.

1225 15*th Street, N. W.*

THE INFLUENCE OF DRUG IMPRESSIONS—A STUDY IN MEDICAL EMPIRICISM.

By ELMER LEE, A. M., M. D., Ph. B., New York.

Vice-President American Academy of Medicine; Chairman of Section on State Medicine, American Medical Association; Member of Committee on Revision U. S. Pharmacopœia, 1890.

The symptoms of disease and their treatment have been narrated a vast number of times, perhaps too many. At the recent meeting of the American Medical Association, there were more than 600 papers on the programme, representing the most positive proof of the empiricism of medicine. The mere

presentation of such a list of essays at an annual meeting of one medical association, means, if it means anything, that medicine is as far from a science to day as it ever has been in its modern history. Now that the papers of that meeting appear from week to week in print, the search for something definite that will augment the cure of sickness is certain to provide readers; but is an application of what is read likely to benefit the sick beyond the helps employed last year or the year before?

Read them and decide for yourself if your experience in practical therapeutics needs any reminders of the hopeless confusion that reigns since the advent of excessive commercialism in pharmacy, and the birth of a new coal tar derivative or serum cure for each new day of the year. The profession is kept in a ferment of experimentation at the instance of the industrious chemist and commercial layman. The commendations of worthless drugs are planned and worded with all the conceivable art with which language abounds—practically the same art that is used to enhance the claims of such remedies as are advertised to the public through the secular press. And lately the proprietors have adopted a policy of working their wares at first upon the profession through the medical journals and then later upon the people through the religious and secular papers. The demand for advertising has become so important as a factor of journalism that quack nostrums are now admitted to the advertising pages of the medical journals.

It would seem but natural that ere long, through concerted action by an army of trained physicians, such perfection in the treatment of the sick could be obtained which would satisfy the public as well as justify the profession in their claim to the title of physician. The laity has looked and waited while the experiments have been taking place, covering hundreds of years and directed by innumerable clinicians, ever hoping to secure perfection in therapeutic methods. The premature taking off of the patients illustrate too frequently how vain the search for the success has been, either by the inaptitude of the average physician to comprehend natural methods in treatment or by the blinded adherence to chemicals which are so generously recommended in the spurious literature of the advertiser.

The reforms in treatment, so long as dependence is placed upon a belief in drugs to arrest and change pathologic conditions into normal health, will be slow, insecure and disappointing. The trial of drug remedies has included millions of instances and the time of the entire history of civilization. The failures to cure are strangely ascribed to the selection of the wrong drug or the improper dose, or some other incidental matter pertaining thereto which serves to defeat our expectations. Already the number of preparations devised by the chemist for the drug treatment of disease, according to good authority, exceeds 25,000 different remedies. The array of material from which to select is so great as to constitute a perpetual riddle in medicine. Individual judgment as to what remedy and in what dose will ever prevent, judging by analogy from the experience of the past, that simplification and approach to perfection of therapeutic method which is the desire of the age in which we live and the high need of the hour.

Were it possible for the profession to determine to its satisfaction the treatment of a disease so that it could be considered as settled, it could then turn the attention to some other medical problem, and, after its mastery, take up still others, and so on, until the entire list would be completed. A great many years in the professional life are wasted in efforts to master what are, after all, only the non-essentials.

Then, again, the influence of drug impressions upon the mind, from childhood to old age, interferes with fearless and original investigations in other directions of treatment, more simple and truer to nature. It seems to be as difficult to free the mind from the ancient, mediæval and modern beliefs, relative to the popular custom of trying to cure disease by the administration of drug substances, as it is to escape the doctrines of theology.

Dr. Oliver Wendell Holmes, in an address before the class of 1861, at Harvard Medical School, spoke the truth in his emphatic and epigrammatic manner as follows: "The disgrace of medicine has been that colossal system of self deception, in obedience to which mines have been emptied of their cankering minerals, the vegetable kingdom robbed of all its growth, the entrails of animals taxed for their impurities, the poison-bags of reptiles drained of their venom, and all the conceivable abominations thus obtained thrust down the throats of human beings suffering from some fault of organization or nourishment of vital stimulation;" for which remarks he came near to excommunication from the orthodox profession.

Confusion arises frequently when an attempt is made to discover the relations between cause and effect, so that it is never certain in the minds of those practitioners who depend upon

chemicals for the cure of the patient, which is the symptom of disease and which that of the drug. Besides, the attempt to treat symptoms instead of conditions means much trouble to the physician and generally disaster for the patient.

There is widespread belief that it is necessary to change the aspect of symptoms of disease by substituting a drug symptom, regardless of the vitality or the general effect upon the patient. For this purpose, a great variety of chemic depressants, excitants, irritants and obstructions are introduced into the human system, thinking that in some way, not very well understood, that they contribute advantageously to the natural processes in their efforts to eliminate the cause of the disease.

Dr. Charles E. Page, a Boston physician, who is as much a master of practical therapeutics in the treatment of disease as was Dr. Holmes a natural autocrat in the philosophy of medicine, says, in a recent communication, that "Colonel Ingersoll seems to stand precisely where we do as to orthodoxy, and his criticisms of theology and the supernatural would apply equally well to the popular theories of medicine. The literature on the value of water treatment, pure and simple, inside and out, and statistics of comparative death-rate, etc., are ample and at hand for any inquirers, but the profession prefers to stick to the popular plan of treatment, unaware that drug poisoning interrupts and protracts the recovery of the patient. But they are orthodox, misled every way, and the knowledge of natural method does not penetrate the bomb-proof shell cast about them by the teaching of the medical schools."

In a recent letter from another discerning and successful practitioner he writes as follows: All the ills to which the flesh is heir can (if curable) be treated successfully by hygienic methods. When health is lost, it is folly to complicate the case or render it hopeless by taking drug substances. It is worse than folly to surgically mutilate the body when there is not the slightest need. The life giving agents which nature provides are intended for our use in sickness as well as in health. They confer a twofold blessing—they keep us well so long as we use them properly; they also restore health when it is impaired. They do this without wasting the vital force and without injuring or destroying the constitution.

Why should the patient swallow a poison because he is ill, or take that which would make a well man sick? Such practice has neither philosophy nor common sense to recommend it. In sickness, the body is already loaded with impurity; that is why it is ill. By taking drug medicines, more impurity is added thereby, and the case is further embarrassed and harder to cure.

Furthermore, he states: The judicious use of hygienic agents not only does away with drugging, but with the greater part of surgery. Were the practice of hygiene universal, health would be the rule and sickness the exception. Drugs, as curative agents, would scarcely be heard of; their uses would be in chemistry and the arts, where they properly belong.

The Hoosier farmer tells of the death of his wife; it is tender and pathetic, and contains a moral beneath the homely phrases:

* "Lived together forty year, sir,
Her an' me, come next December!
Never hed no trouble, neither,
Died, two year ago in August,
Hed the grippe, or somethin' like it.
Tuck a powerful sight of quine-ine,
And a heap of draps and powders,
And right-smart of other truck, too.
Nothin' seemed to do no good, tho."

It would be but a brief day, if only natural agencies were employed in the cure of the sick, until the treatment of acute diseases would be established upon a plane of perfection equal to that of mathematics, to the dismay and dispersion of empiricism. It is my experience that, in order to comply with the preconceived opinions of the sick and their friends, drugs in some form are required, not that they exert a curative influence from a pathologic standpoint, but that they appease the patient and satisfy the expectations of the friends. It is nearly or quite as important to satisfy the friends as it is to treat the patient.

For the purpose of complying with the inexorable demand by the patient for medicine, be he "wit," "sage," or "imbecile," use is made of some favorite placebo. The beneficial effect of the placebo is enhanced by a "wise look" and explicit directions, as well as by a judicious make-believe medicine that has a proper tint of red, green or *yellow*.

In a case of stomach derangement of recent date, a lady patient returned to me unexpectedly to say that by mistake she had taken an overdose of medicine, which had greatly alarmed her, and had produced, she said, a similar effect to that of too much morphine. She had been instructed to take one tablet at each dose, which contained nothing but one grain of sugar of milk, whereas the overdose, which had so alarmed her, consisted of two of these sugar of milk tablets. It was hard to

* (Facts and Fancies, O. Evarts.)

keep my equanimity under this amusing circumstance, but the patient was sent away with the remark that she must be more careful in the future not to mistake or exceed the directions.

In another case a mother, whose child was under treatment, complained that the last medicine given for her use was not entirely satisfactory. Her observations as to the effect of the objectionable remedy was thoughtfully received, and tablets of sugar of milk, but of a different color, was substituted for those which had been unsatisfactory. The mother, at the time of her next visit to me, spoke in the highest praise of my skill in meeting the requirements of her daughter's case which had "baffled the efforts of the professors at the college."

The day is far away when the profession will be able to drop the mystic influence of potions and powders, draughts and placebos in general or special practice. Nevertheless, the experience gained in the active work of the profession for many years has taught the valuable lesson of non-reliance upon drug therapeutics for the cure of the sick, much to my own satisfaction and to the rapid recovery of the patients. A few chemicals have a proper place in the exigencies of the moment, for purely temporary use, but beyond this limited employment there is no physiologic justification for the introduction of drugs or serums in the human organism.

When the departure from the habit of prescribing medicines in the usual form and according to the prevailing popular notions of their utility was first made, it was with acknowledged fear and caution, because the milestones at that time were few and far between on this highway of treatment. The journey along the way since then has been made safe and agreeable by reason of the association with many wise and friendly masters of medicine whom it has been my pleasant experience to meet, and from whom both counsel and encouragement have been received.

10 *W. Forty-ninth Street.*

Roentgen Rays Abolish Corsets.

At the instance of the Queen of Portugal (*Amer. X-Ray Jour.*, May, 1897), her court ladies submitted themselves to the search-light of X Rays. They were startled at the sight of their distorted ribs and bones, the result of tight lacing. Henceforth they are to be free women, for their corsets are to be cast aside.

PAQUIN'S SERUM IN TUBERCULOSIS.
Report of Cases.

By EVERETT A. WOOD, M. D., Sedalia, Mo.

CASE I.—James P., age 20; family history fair. In May, 1896, had pneumonia, previous to which his health had been fair, excepting a winter cough. July 26th, 1896, his condition was as follows: Left lung mostly consolidated; impaired respiration in right lung; respiration 42; pulse, 120 to 150; temperature, 101 to 103°; constant violent cough; expectoration profuse; emaciation extreme; weight, 120 pounds. Microscope showed a case of mixed infection. Treated him one month with creasote; no improvement; then began the use of antitubercle serum in connection with tonic treatment. November 15th, the patient was discharged. His condition was as follows: temperature normal; respiration normal; pulse 90 and regular; both lungs clear; weight, 160 pounds. July 1st, 1897, is working on a farm, and seems to be perfectly well. Pulse normal and weight 170 pounds.

CASE II.—J. W., age 26; family history not good. Had a hæmorrhage in July, 1895, and another in October, 1896. His cough was severe; expectoration great. October 24th, 1896, his weight was 132 pounds; temperature, 99 to 101°; pulse, 102; lower lobe of left lung was infiltrated; rough respiration in right lung; bacilli found in large numbers. Serum injections begun at once. April 6th, 1897, operated for fistula in ano. May 22d, no cough or expectoration; no fever; pulse and respiration normal; weight, 161 pounds; feels well.

CASE III.—Mrs. S., age 20; has one child 15 months old; family history fair, but was always anæmic herself, and never was very well. Since the birth of the child, her lungs rapidly became involved. December 1st, 1896, her left lung was mostly infiltrated; coughed a great deal, but expectorated little; temperature, 101 to 104°; pulse, 144; respiration, 42. Microscope confirmed diagnosis of mixed infection. Gave serum injections quite regularly to May 1st, 1896. Her temperature was normal most of the time, occasionally 100°; respiration normal; pulse, 108 to 120; some gain in strength, but none in weight. She then went to another city on a visit, and took bowel trouble, from which she has not yet fully recovered. She left off the serum while absent. She coughs and expectorates some; can hardly expect a recovery, because of the persistent anæmia.

CASE IV.—Mrs. D., age 26; family history bad. Begun with whooping cough in December,

1894; constantly grew worse. February 1st, 1897, I found both lungs largely infiltrated; respiration, 30; pulse, 150, temperature, from 89 to 103.5°; violent cough; profuse expectoration; constant sweats; weight, 82 pounds. Bacilli present in large numbers. Gave serum in doses from 30 to 60 minims daily; also tonics. April 26th, her pulse ranged from 108 to 120; temperature, 96 to 102°; appetite good; no sweats; weight, 88 pounds; feels well. May 12th, took cold while riding, rapidly grew worse, and died May 12th.

Case V.—Mrs. B., age 33; family history good. Had tuberculosis for three years; traveled a great deal, but grew worse. February 11th, 1897, large cavities in left lung; right lung infiltrated; respiration, 54; pulse, 120; temperature, 102.5°; larynx badly involved; could not talk or swallow without a local anæsthetic. She was almost moribound, but pushed the serum. March 15th, respiration, 24; pulse, 96; temperature, 101°, throat was better from local treatment. No sweats; sleeps better; feels better. April 1st, severe changes in the weather, and she rapidly declined, and died April 10th.

Case VI.—Miss W., now under treatment; age 22; has coughed for two years. June 21st, expectorates a great deal; weight, 121 pounds; pulse, 132; temperature, 101°; respiration, 30; upper portions of both lungs dull on percussion; bacilli found in large numbers; begun serum at once. July 19th, pulse, 90; temperature normal; respiration, 94; weight, 126 pounds; cough and expectoration less.

HYPERTROPHY OF THE LINGUAL TONSIL AND ITS TREATMENT.*

By O. A. M. McKIMMIE, M. D., Washington, D. C.

At the back of the tongue, between the epiglottis and the circumvallate papillæ, are situated masses of lymphoid tissue similar in structure to the faucial tonsil and known as the lingual tonsil.

As early as 1543, Vesalius pointed out the fact that the faucial tonsils were connected by a continuous chain of lymphatics. This same fact was noted by Wharton in 1685, Schäffenberg in 1704, and by Morgagni in 1765. The importance of this anatomical connection will be apparent when we speak of the ætiology of the disease under discussion.

Hypertrophy of the lingual tonsil as a cause of certain distressing and obscure throat symptoms was first brought to the notice of the profession in a paper by Lennox Browne before the First International Laryngological Congress at Milan in 1880. Since then many observers have called attention to this subject—notably Stoerk, Curtis, Rice, and especially Swain, who based his remarks and conclusions on a careful analysis of 190 cases.

I have ventured to bring this subject before the Society because of its importance both to the general practitioner and the specialist.

We may divide our cases of disease of the lingual tonsil into three classes:

1st. Simple hypertrophy, with either moderate or marked enlargement of the lymphoid follicles;

2nd. Hypertrophy, associated with varix at base of the tongue; and

3rd. Hypertrophy, associated with enlargement of the thyroid body.

Of these conditions, the first is, in my experience, the most common. I have had only a few opportunities for observation of cases coming under the second and third classes.

Hypertrophy of the lingual tonsil is more common in young adults, from 18 to 45 years, than in children or the aged; and, in my experience, is more frequent in males than in females. Writers on this subject differ in their statements regarding the influence of sex in causation.

Dr. James B. Ball, of the West London Hospital, says: "According to most observers, the disease is much more frequent in women, and this is my own experience. Seifert, however, in a hundred and six cases, found fifty-eight men and forty-eight women."

McBride speaks of this disease as being "more common among women than men."

Bosworth, in the latest edition of his work on Diseases of the Nose and Throat, says: "It occurs far more frequently in females than in males, thus apparently reversing the rule which obtains with reference to the faucial tonsils."

Lennox Browne gives the percentage of cases, including both hypertrophy and varix, as "males 69 per cent., and females 31 per cent."

This disease is frequently associated with hypertrophy of the faucial and pharyngeal tonsils, a fact easily understood when we remember the anatomical connection.

The predisposing cause seems to be a congenital or acquired debility of the vaso-motor system, a condition frequently manifested in

* Read at a meeting of the Medical and Surgical Society of the District of Columbia, May 20th, 1897.

the contiguous mucous membranes, especially that of the turbinate bodies.

The disease is frequently found in adults who show evidences of strumous disease during childhood, when lymphatic changes are prone to occur.

While hypertrophy of the lingual tonsil may be the result of recurrent attacks of acute inflammation, or of some one of the acute infectious diseases, it is probably, in most cases, chronic from the start.

Of the exciting causes, there is little to be said, but the disease is frequently found in those whose occupation habitually forces them to over-use the voice, or in those who use it improperly.

The symptoms vary in different cases, and are principally paræsthesiæ. The patient may complain of a foreign body in the throat which he likens to a pea, hair or straw, or he may describe his sensations as like those which rubbing the inside of the throat with a stiff brush might produce.

These sensations are accompanied with an increased secretion of tenacious mucus, which the patient makes frequent efforts to dislodge.

The frequency and violence of the cough thus caused is enough, in many cases, to produce a chronic laryngitis and dysphonia or noticeable hoarseness. In the more severe cases, there may be actual pharyngeal or laryngeal spasm.

I believe we frequently fail to relieve many cases of subacute or mild chronic laryngitis because we do not recognize the dependence of these conditions upon the diseased and enlarged glands at the base of the tongue, which act as direct exciting causes of laryngeal inflammation by reason of the violent efforts made to clear the throat and hawk up the sticky mucus which gathers in the glasso-epiglottic fossæ.

The intensity of symptoms varies at different times, and is apt to be most troublesome towards evening, especially in those who use the voice in public speaking or singing.

Simple chronic obstructive rhinitis is frequently associated with enlargement of the lingual tonsil, both troubles depending upon a common neurotic element.

I am a firm believer in the neurotic origin of many of our cases of chronic inflammation of the nasal and pharyngeal mucous membranes.

In the nose and throat, an acute inflammation frequently results in chronic vascular dilatation and consequent disturbance of function and thickening of the tissues.

This vaso-motor disturbance accounts for the varicose condition of the lingual veins of which I have spoken. Those cases in which there is an accompanying enlargement of the thyroid indicate still more forcibly neurotic element in this disease.

The *diagnosis* can only be made by means of the laryngeal mirror which reveals the glosso-epiglottic fossæ filled to a greater or less extent with either discrete, cone-shaped or flat enlarged glands or a mass of pinkish nodulated tissue. On either side of the glosso-epiglottic ligament there are frequently found areas of marked congestion and intense redness.

In the treatment of cases of slight hypertrophy, I have depended mainly on the use of solutions of silver nitrate. I know it is fashionable to decry this remedy at the present day; but we cannot all think alike, and until I find something better, I shall continue to use this drug.

The solutions I use vary in strength from sixty grains to the ounce of distilled water to 120 grains to the ounce. I have frequently used the stronger solution just mentioned without previous cocainization, and have never seen it produce even temporary pain—the only sensation being a slight burning, which passes off in a few minutes. Tincture of iodin and Lugol's solution have been highly recommended, but I have never used either for this purpose.

The silver solution is applied with a suitably bent cotton-wrapped applicator, and is thoroughly rubbed into the hypertrophic tissues. This is, of course, done with the aid of the throat mirror.

When we find distinct separate enlargements of the size of a pea or larger, some more radical means of treatment is demanded. These glands are best removed by the cold or hot snare or by means of Seiler's guillotine. I prefer the cold snare to any other instrument for this purpose. With it one can thoroughly remove the hypertrophic masses, while with any form of guillotine only a section even with the tongue surface can be removed. After the use of the snare there is much more pain than after the use of the guillotine.

This pain lasts for three or four days, and is especially severe when the patient swallows.

I have not used the galvano-cautery snare because of the pain which always follows a burn in any location where movement is unavoidable. The pain is severe after the use of the cold snare, and would be greater if to crushing and laceration of the tissues a burn were superadded. Moreover, for the removal

of any but the most marked enlargements the cautery snare offers no advantage.

The removal of moderate-sized glands is followed by practically no hæmorrhage, and is a perfectly safe operation.

When lingual varix exists, the only satisfactory treatment is by lightly burning the dilated veins with the electro cautery point and thus produce an obliterating phlebitis.

In those cases presenting an enlargement of the thyroid, it is to be noted that the size of this body is dependent on the amount of congestion at the base of the tongue, and is more marked when any acute inflammation of the pharyngeal mucous membrane exists. Such cases are anæmic, and the general health below par.

In addition to local treatment of enlarged lingual glands and counter-irritation over the enlarged thyroid, treatment directed to improving the general nutritive and nervous systems is imperative, if we wish to accomplish anything.

I have made three crude water-color sketches illustrating the conditions observed in these cases.

Fig. 1.

Figure 1, copied with slight modification from the work of McBride, illustrates a case of very unusual enlargement. Such a case could only be operated with the cautery snare with safety, as removal of such large masses by any other means would be dangerous on account of hæmorrhage.

Figure 2, copied from Bosworth, shows the most common form of the disease.

Figure 3, drawn from one of my own cases, illustrates the results of local treatment of a simple case by means of the silver solutions. One especially prominent gland was removed with Seiber's guillotine. This case presents slight

Fig. 2.

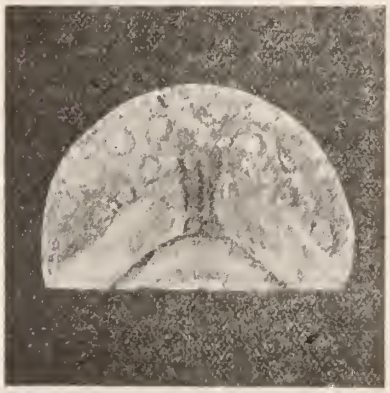

Fig. 3.

enlargement of the thyroid on the right side, and also slight enlargement of one of the cervical glands of long standing. The lingual glands are diminishing in size, and his symptoms are much less than before treatment was instituted.

In conclusion, I would urge careful examination of the base of the tongue in every case of persistent hoarseness, laryngitis or cough (not explained in some other way), and the removal of any hypertrophied glands which may act as exciting causes. Allow me to say again, that I believe that hypertrophy of the lingual tonsil and the ofttimes associated nasal hypertrophy, are often due to a neurosis of the circulatory system, and not dependent on purely local causes. Local treatment is essential, but in many cases must be combined with general tonic measures.

1333 *N Street, Northwest.*

VAN ARSDALE'S TRIANGULAR SPLINT IN 33 CASES OF FRACTURE OF THE SHAFT OF THE FEMUR IN INFANTS AND CHILDREN UNDER SIX YEARS.

A Resume of the Difficulties and Complications Overcome.*

By A. ERNEST GALLANT, M. D., New York.

An extended review of the literature on the treatment of the above-named accident, shows a wide variance of opinion as to the best way to handle these cases. Owen and Holthouse believe that they all do well; all that is necessary is to keep the little patient at rest, and protect the limb from disturbance.

Difficulties.—On the other hand, the practical difficulties in the way of the usual dressings have seemed so great that Paget and Callender have discarded them entirely.

Starr points out the difficulties of *maintaining* the *fragments* in apposition, due to restlessness, and the necessity of *frequent removal* of the dressing due to soiling and irritation with chafing and irritation.

Jacubasch complains that with Schede's vertical extension, *hypo-static pneumonia* could not be prevented.

Physiological Muscular Relaxation.—Von Wahl, Hamilton, Erichsen, Schutter, Hunter, and others recognize the value of the doctrine of Percival Pott, which consisted in the assumption that the resistance of those muscles which tend to produce shortening can be sufficiently overcome by posture without the aid of extension; as, for example, in case of broken femur, it was only necessary to flex the leg upon the thigh and the thigh upon the body, laying the limb afterwards quickly upon the outer side, upon the bed.

Professor Van Arsdale's Method.—Appreciating the importance of muscular relaxation, and in order to avoid keeping the child in bed, and frequent change of dressing, Dr. Van Arsdale devised the "triangular splint," which is made of either thick binders' or straw card-board, and adjusted in the following way:

1. Measure the length of the uninjured thigh, from the middle of the groin to the end of the femur.

2. Outline upon the card board a figure resembling two spades of cards, united at their points, the length of *each* of the four sections to be equal to the length of the child's thigh. The widest part of the "spades" to be the same number of inches as the length of the thigh. Cut outlined portion with knife or scissors.

3. Moisten card-board on one side and fold on the dotted lines, lapping the handles of the spades, so as to form a triangle, and fasten them together by two strips of rubber—adhesive plaster.

4. Cover the abdomen and thigh with cotton; secure cotton in position by a gauze bandage.

5. Flex the thigh to a right angle and insert the triangle, so that one flanged portion embraces the thigh, and the other lies upon the abdomen.

6. Secure the splint by muslin bandages carried through the splint around the body, and then around the thigh. To prevent lateral motion, take reverse or figure-of-eight turns at the upper angle around the body, and at the lower angle around the knee.

7. To fix the splint and prevent removal, encircle body and thigh with starch or crinoline bandages.

While one person can adjust the splint, it is better to have an assistant keep the thigh flexed against the splint, and at the same time make extension on the femur, while the splint is being secured in place.

In a child with a prominent abdomen, the upper limb, made by overlapping the handles, can be shortened, so as to increase the flexion of the thigh, and throw the body angle further forward, and allow the child to sit down with greater ease and comfort.

The leg should be bandaged from the toes to the knee, to prevent any tendency to congestion, but not so as to prevent free motion. By placing the finger on the pulse at the ankle, the surgeon can convince himself that there is no undue pressure of the splint in the groin.

At the end of each week the child was brought to the dispensary for examination, and if the splint had become loosened it was adjusted, and finally taken off at the end of the *third* week.

To remove stiffness from disuse and restore muscular tone, friction was applied morning and night to the limb, the strokes being always directed toward the trunk, never up and down. There was no appreciable shortening.

The splint was first applied February 13, 1893, and since that time has been used by Dr. Van Arsdale in fifteen cases, and by Dr. Swinburne in eighteen cases, or a total of thirty-three cases.

Frequency of Fracture of Femur.—Gurlt tabulated 64,979 fractures in all ages, of which 5,051 or 7.8 per cent. were of the femur.

*An abstract of paper read at the Semi-Centennial meeting of the American Medical Association, Philadelphia, Pa., June 3, 1897.

Of 1,599 fractures in children under ten years, collected by the writer from recent literature, 296 or 18.5 per cent. were fractures of the femur.

At the Good Samaritan Dispensary, during the past nine years (1887 to 1895, inclusive), the children under ten years attending the various departments, made up a total of 254,-036, with but forty cases of fracture of the femur.

Ages.—In the youngest cases fracture occurred during birth, and the oldest in which the triangular splint was used, was five and a half years.

Sex.—Of twenty cases in which the sex was recorded, five were girls and fifteen boys.

Diagnosis.—Von Wahl considers the diagnosis rendered as sufficiently certain, by the pain, the inability to walk, the shortening and crepitation.

Angle-Formation.—In young children, an angle or bending of the limb with anterior convexity, is observed, while in older children, an external lateral convexity or angle-formation takes place.

Seat of Fracture.—Corresponding to the experience of Von Wahl, Bitter and others, in all our cases the fracture was located at or above the middle of the shaft.

Direction of the Fracture.—Gross, Holthouse, and Erichsen believe that in infants and young children the fracture is transverse or nearly so. In rachitic children, the so-called green-stick variety is met with.

Cause of Fracture.—Chaussier found, as the result of autopsies, as many as 112 fractures (intra-uterine) in the same fœtus, depending, of course, on so-called "congenital rachitis." Intra-uterine fractures, due to external violence or abnormal muscular contraction, may occur in the bones of a healthy fœtus. In by far the largest majority, fractures of the shaft of the ferum are the result of direct or indirect external violence.

Time Required for Consolidation and Cure.—Firm union in the hands of various authorities ranges from eleven days to eight weeks. With the Van Arsdale splint, a cure has always resulted in from two to three weeks.

Shortening.—Erichsen voices the opinion of a large number of surgeons when he says that in children union may almost always be procured without any shortening of the bones. But a slight diminution in the length of the limb is, in reality, of no consequence, and gives rise to no inequality in gait; the pelvis, by the obliquity it assumes, remedies this. It is only when shortening exceeds one-half or three-quarters of an inch that it is important and occasions deformity. Kummel reports a number of cases treated by vertical extension, in which there was from one-half to two centimetres *lengthening.*

Non-Union.—D'Arcy Power collected seventy-one cases of non-union in children, seven of the clavicle, nine humerus, forty-two leg, twelve femur, and one forearm. Operative procedures gave firm bony union in but six of these cases. He concludes that the prognosis is bad. Fibrous union, with artificial support, will do for the upper extremity, but only amputation for the lower limb.

Advantages.—By applying Van Arsdales' triangular splint to fractures of the shaft of the femur in infants and young children:

1. Overlapping is prevented by the flexed position of the thigh, relaxing the muscles.

2. The fragments are held in apposition, owing to the nice adjustment of the splint, which embraces the thigh and maintains complete immobilization in whatever position the child may be placed.

3. Frequent readjustment is unnecessary, as the dressings are not soiled by the excretions, nor are dermatitis and excoriation met with.

4. Complications due to confinement in bed in the dorsal position, such as hypostatic pneumonia and vulvo vaginitis, are avoided, and liability to concurrent diseases diminished.

5. Loss of flesh and strength does not occur, as the child is well and happy; it can nurse at the breast in the usual position, sit on a chair, play on the floor, and even learns to crawl about; may sleep on either side; in fact, lives a perfectly natural life, with the one exception —inability to walk.

6. Under these conditions, we secure rapid, firm consolidation in three weeks or less, without practical shortening, and non union will be rarely, if ever, met with.

Conclusions.—1. Fracture of the femur approximates 7 per cent. of all fractures, at all ages.

2. That fracture of the femur in all children is a comparatively infrequent accident.

3. That it represents about 18 per cent. of all fractures in infants and children under ten years.

4. It is most frequently located at or above the middle of the thigh.

5. It may occur as a prenatal injury or during labor, from indirect violence.

6. It is most often the result of direct violence.

7. The direction of the fracture is most often transverse or nearly so; with convexity for-

ward, in young children, with some outward lateral deviation in older children.

8. With appropriate treatment, adapted to the age of the child, practical shortening can be prevented.

9. That in Van Arsdale's triangle we have a simple means for avoiding the many difficulties and complications, and for securing a perfectly normal limb.

10 *West Thirty Sixth Street.*

Proceedings of Societies, etc.

MEDICAL EXAMINING BOARD OF VIRGINIA.

Richmond, Va., June 21–24, 1897.

The Spring meeting of the Virginia Board of Medical Examiners was held in the city of Richmond, in the Capitol building, June 21, 22, 23 and 24, 1897.

Present—Drs. L. S. Foster, J. E. Warriner, S. W. Budd, R S. Martin, J. W. Dillard, E. M. Magruder, E. T. Brady, Chas. T. Rodgers.

In the absence of the President and Vice-President, Dr. S. W. Budd was called to the chair.

Dr. R. S. Martin, the Secretary, recorded.

The minutes of the last meeting were read.

Questions on Hygiene, Medical Jurisprudence, Anatomy, Physiology, Materia Medica and Therapeutics, and Surgery were submitted and approved.

It was decided to hold the spring meeting of the Board at the regular appointed time, unless otherwise suggested by the Executive Committee.

Dr. J. E Warriner offered the following resolution, which was adopted:

That the Legislative Committee is hereby instructed to endeavor to have the law so amended as to require applicants to pay ten dollars for the privilege of coming before the Board.

Dr. Jno. W. Dillard offered the following resolution, which was adopted under the suspension of the by-laws:

That the action taken by the Board, at the fall meeting held at Rockbridge Alum Springs in 1896, in regard to the new mode of conducting examinations, was illegal on account of its not having laid over the time required by our by-laws. The same is hereby declared void.

On motion of Dr. R. S. Martin, the President appointed the following committee to draft resolutions suitable to the memory of Dr. Patterson, a former member of this Board: Drs. Rodgers, Brady and Dillard.

Dr. J. E. Warriner then introduced the following resolution, which was adopted:

That the Secretary shall have a sufficient number of copies of the Virginia Medical Law printed for distribution when called for, if not furnished by the Secretary of the Commonwealth.

On motion of Dr. Foster, the Board adjourned.

The Board met in Col. Bigger's office June 22d at 12 M.

Dr. E. M. Magruder was appointed temporary chairman.

Present—Drs. Magruder, Brady, Foster, Priddy and R. S. Martin.

Questions on Chemistry were read by Dr. Priddy and adopted.

The Board then adjourned.

According to adjournment, the Board met in Col. Bigger's office at 9 P. M. June 22d.

Present—Drs. R W. Martin, President; R. S. Martin, Secretary and Treasurer; Brady, Rodgers, Magruder, Slaughter, Foster, Warriner and Priddy.

Dr. M. A. Douglas, homœopathic, of Danville, was present in the examination hall today, looking after the examination of the applicants belonging to his school.

Dr. Brady offered the following resolution:

That the resolution passed last night rescinding the new mode of examinations introduced at the fall meeting, held at Rockbridge Alum Springs in 1896, be reconsidered.

Seconded by Dr. Foster and passed unanimously, after a full discussion.

Dr. Slaughter moved the adoption of the resolution proposed at Rockbridge Alum Springs. The resolution was adopted with the following amendment by Dr. Foster: That it apply to this class being examined only.

Dr. R. W. Martin, President, ruled that those applicants now registered can choose either mode of examination, and change the plan at a future meeting if desired, and that those hereafter coming before the Board can only be examined according to the old plan.

Questions on Histology, Bacteriology and Pathology, Obstetrics and Gynæcology, and Practice were read and adopted.

The committee appointed to draft resolutions suitable to the memory of Dr. Patterson, reported as follows:

Whereas, It has pleased Almighty God in His providence to remove from us by death our honored colleague, Dr. H. M. Patterson, of Staunton, Va.; therefore be it

Resolved, 1. That we have lost a faithful and valued member, the medical profession a kind and courteous brother, and his community a wise and beloved physician.

Resolved, 2. That this resolution be spread upon the records of the Board, that our sympathy be extended to the bereaved family, and that the Secretary be instructed to send them a copy of this resolution.

C. W. Rodgers, *Chairman.*

Dr. Foster introduced the following resolution:

That the printing of the questions for examination be paid for out of the general fund.

There being no further business, the Board adjourned.

R. W. Martin, *President.*

R. S. Martin, *Secretary.*

The following are the *Questions* adopted for the *Examination* of three hours each in the nine Sections:

I. Section on (I) Hygiene, and (II) Medical Jurisprudence.

(Tuesday, 9 A. M. to 12 M.)

Dr. J. W. Dillard, Lynchburg, Va., Chairman.

(I) Hygiene.

Dr. E. M. Magruder, Examiner.

Ques. 1. *Air*—Give (*a*) The average proportion of CO_2 in air.
(*b*) The maximum amount allowable in the air of dwellings.
(*c*) The principal impurities found in air, and their sources.

Ques. 2. *Water*—Name (*a*) The qualities desirable in water for drinking purposes and domestic uses.
(*b*) The diseases due to impure drinking water.

Ques. 3. *Food*—Name (*a*) The four alimentary principles of food, giving the chief examples of each.
(*b*) The diseases caused by impure food.

Ques. 4. *Disinfection*—Describe (*a*) The disinfection of clothing.
(*b*) The disinfection of the sick room.

Ques. 5. *Soil*—Describe (*a*) The chief modes of soil contamination.
(*b*) The relation of ground water to disease.

(II) Medical Jurisprudence.

Dr. Dillard, Examiner.

Ques. 1. Differentiate the corpus luteum of pregnancy (true) from that of the adult virgin (false), and say under what circumstances such information would be necessary.

Ques. 2. Give the principal evidences of live birth; and state the changes that take place after birth in the course of the circulation.

Ques. 3. Give the principal signs of death, and say what is meant by cadaveric rigidity.

Ques. 4. Name three modes of sudden death.

Ques. 5. What is a dying declaration, and what are the conditions necessary for the same to be admitted as evidence in court?

II. Section on Chemistry.

(Tuesday, 12 M. to 3 P. M.)

Dr. A. S. Priddy, Keysville, Va., Chairman.

The applicants will select any six of the following questions:

Ques. 1. (*a*) Define chemistry.
(*b*) Define physics.
(*c*) How can it be demonstrated that a molecule of an element is a double structure?
(*d*) What is molecular weight?

Ques. 2. (*a*) Differentially, define a chemical compound from a pharmacal compound.
(*b*) To which respective class does each, an emulsion and soap, belong?
(*c*) What is a chemical formula, and what its functions?
(*d*) What is a chemical equation? Illustrate by example.

Ques. 3. (*a*) Define a crystal.
(*b*) Define amorphism; isomorphism; polymorphism.
(*c*) Give an example of each, an analytical and a synthetical product, with explanation.
(*d*) Define analysis, and how it is subdivided.

Ques. 4. (*a*) Explain lime-burning fully, by chemical formulæ and equations.
(*b*) What is lime-water?—write out reaction in making it.
(*c*) Explain the domestic process of "bread rising."

Ques. 5. (*a*) Give physical characteristics of phosphorus. Explain how phosphoric oxide and phosphoric acid are made.

What morbid changes are present in the bodies of persons poisoned by phosphorus?

(*b*) How is the presence of phosphorus detected in organic substances?

(*c*) Give formula, test and antidote for silver nitrate.

(*d*) What is the source and formula of Epsom salts?

Ques. 6 (*a*) What is carbolic acid, chemically speaking?

(*b*) What is an alcohol?

(*c*) Name first three alcohols of paraffin series and their rational formulæ.

(*d*) What is glycerin, chemically speaking?

Ques. 7. (*a*) Give some diagnostic indications of the urinometer in morbid urine.

(*b*) Give most common test for albumen.

(*c*) How would you differentiate cloudy urine due to phosphates from albumen in boiling urine?

(*d*) Give fully Fehling's test solution for sugar.

Ques 8. (*a*) What is an alum?

(*b*) What is alum (U. S. P.)?

(*c*) How would you diagnose and treat a case of lead-poisoning?

(*d*) What is tyrotoxicon, and what are its toxic effects on the system?

III. Section on Anatomy.

(Tuesday, 4 P. M. to 7 P. M.)

Dr. E. T. Brady, Chatham Hill, Va., Chairman.

Note.—The 7th and 8th questions must be answered by all. You may choose any four of the remaining six—omitting any two. Answer in the order given, and in the 7th and 8th questions describe in the order specified. Write plainly, spell correctly, and use as few words as will make your meaning clear, at the same time leave nothing to be taken for granted. Your paper will be graded by its contents, and we cannot undertake to distinguish between an error from ignorance and a slip of the pen.

Ques. 1. What and where are the fontanelles?

Ques. 2. Describe the elbow joint.

Ques 3. What and where are the pleuræ? Decribe them.

Ques. 4. Describe the circle of Willis.

Ques. 5. What ligaments are formed by suspensory folds of peritoneum?

Ques. 6. Give origin, insertion, action and nerve supply of the masseter, lingualis, extensor communis digitorum, and external sphincter ani muscles.

Ques. 7. What is a complete oblique inguinal hernia? Name its coverings from without inward. State its relations to the epigastric artery, and state where the seat of stricture is most apt to be.

Ques. 8. Describe the bladder, giving its function, relations, capacity, coats, ligaments, blood and nerve supply.

IV. Section on Physiology.

(Wednesday, 9 A. M. to 12 M.)

Dr. R. S. Martin, Stuart, Va., Chairman.

Applicants will select any six of the following questions:

Ques. 1. (*a*) Describe the various secretions concerned in digestion, their sources, and what element of food each digests.

(*b*) What is the daily quantity of gastric juice secreted?

Ques. 2. (*a*) State the quantity of urea secreted in twenty-four hours, and source from which it is derived.

(*b*) Give the reaction of normal urine, specific gravity, quantity secreted in twenty-four hours, and mode of determining the amount of solid matter in any given quantity of urine.

Ques. 3. (*a*) Describe the sounds of the heart; their cause. State number of pulsations per minute at the following ages, to wit—one, three, and twelve years.

(*b*) State from what source the heart receives its nerve supply, and the influence exerted by each nerve.

Ques 4. (*a*) Describe the physiological process of menstruation.

(*b*) Describe the formation and the appearance of the chorion.

(*c*) At what period of gestation is the placenta formed?

(*d*) Does the blood of the mother and fœtus actually come in contact?

Ques. 5. (*a*) What is the function of the quadrigemina?

(*b*) What nerves are concerned in the contraction of the iris?

(*c*) Describe the nerves in their distribution to the recti and oblique muscles of the eye.

Ques. 6. (*a*) What is the difference in the function between the anterior, lateral, and posterior columns of the spinal cord?

(*b*) What effect follows section of the third cranial nerve?

Ques. 7. (*a*) Give physiological explanation of sleep.

(*b*) Describe the Island of Reil. Give its functions and give the important centres in and immediately adjoining it?

Ques. 8. (*a*) What is glycogen; how is it produced, and what are its supposed uses?

(*b*) Trace the complete circuit of blood, beginning at the right heart and mention the changes it undergoes in its course.

V. Section on Histology, Pathology, and Bacteriology.

(Wednesday, 12 M. to 3 P. M.

Dr. R. M. Slaughter, Theological Seminary, Va., Chairman.

Ques. 1. (*a*) Name the three groups of connective tissue, and the several varieties in each group.

(*b*) Give the histology of hyaline cartilage.

(*c*) Describe the histological structure of the peptic glands.

Ques. 2. Name the cardinal symptoms of inflammation, and describe briefly, but clearly, the causes of each of these symptoms.

Ques. 3. (*a*) What is meant by infective inflammation?

(*b*) Describe the streptococcus pyogenes, stating particularly the characteristic by which it is distinguished from the staphylococcus group.

(*c*) Name some of the principal diseases to which streptococcus infection gives rise.

(*d*) State the essential difference between sapræmia and septicæmia.

Ques. 4. Describe the changes (both macroscopical and microscopical) in the lungs in the second stage of acute croupous pneumonitis (stage of red hepatization).

Ques. 5. (*a*) Describe the morbid changes to be seen in the fauces in diphtheria, stating particularly to what these changes are due.

(*b*) In a case of suspicious sore throat, how would you proceed to determine whether the case was one of true diphtheria?

Ques. 6. (*a*) Give the physiological prototype and general characteristics of sarcoma.

(*b*) Name the principal varieties of (unmixed) sarcoma, and state which is the most, and which the least, malignant variety.

Ques. 7. Give the macroscopical and microscopical changes in the kidney in advanced interstitial nephritis.

Ques. 8. (*a*) What are phagocytes?

(*b*) What are the respective origins of the microphagocytes and macrophagocytes?

(*c*) Explain briefly, but clearly, the doctrine of phagocytosis.

VI. Section on (I) Materia Medica, and (II) Therapeutics.

(Thursday, 9 A. M. to 12 M.)

Dr. L. S. Foster, Mathews, Va., Chairman.
Dr. J. E. Warriner, Brook Hill, Va.

(I) Materia Medica.

Dr. Foster, Examiner.

Ques. 1 (*a*) Name the official bromides.

(*b*) What medicines are incompatible with the bromides?

(*c*) Name five official preparations of opium, with dose of each.

(*d*) Give official preparations of alcohol.

Ques. 2. (*a*) Give source, official preparations, and dose of stramonium and creasote.

(*b*) Give source and dose of cocaine, phenol, grindelia, phytolacca and apomorphine.

Ques. 3. (*a*) Give preparations and dose of belladonna, cannabis and conium.

(*b*) What is physostigma, and what active principle does it contain?

(*c*) What is gelseminum, and what chemical principle does it contain?

(*d*) Give its preparations and dose of each.

Ques 4. Give official name, dose and constituents of tartar emetic, cream of tartar, blue mass, Dovers powders, paregoric, Epsom salt, Rochelle salt, and Fowler's solution.

Ques. 5. (*a*) What are triturations?

(*b*) What are the official semi-solid preparations?

(*c*) Give dose of *fluid extracts* of the following: Aconite, belladonna, colchicum root and seed, digitalis, nux vomica, sanguinaria, squill, stramonium, and veratrum viride.

(II) Therapeutics.

Dr. Warriner, Examiner.

Ques. 1. (*a*) Name in order of activity the four best cholagogues and doses of each.

(*b*) Three most active hydragogues and doses.

(*c*) Three most useful mineral astringents.

(*d*) Upon what agent does the value of vegetable astringents depend?

Ques. 2. (*a*) Name four heart tonics most used.
(*b*) State under what conditions one is preferred to another.
(*c*) What are the best hæmostatics for internal use?
(*d*) Give modes and agents used in reducing temperature.

Ques. 3. (*a*) State the principle uses of iodine and its compounds.
(*b*) What preparations are most used?
(*c*) What are the most important emetics by their local action on stomach?
(*d*) Name two systemic emetics, and doses of each.

Ques. 4. (*a*) What are the digestive ferments? State briefly indications for their use.
(*b*) What are antiseptics? Name the most important.
(*c*) Name three principal mineral acids, and the chief action of each.
(*d*) Name three vegetable acids of importance.

Ques. 5. (*a*) State briefly the important uses of opium.
(*b*) Why are atropia and morphia often combined?
(*c*) For what disorders are bromides mostly used?
(*d*) What are the chief uses and dangers of chloral?

VII. Section on (I) Obstetrics, and (II) Gynæcology.

(Wednesday, 4 P. M. to 7 P. M.)

Dr. H. M. Nash, Norfolk, Va., Chairman.
Dr. Chas. W. Rodgers, Fishersville, Va.

I. Obstetrics.

Ques. 1. To what general disorders are pregnant women particularly liable? Give briefly the treatment of the most dangerous of these complications.

Ques. 2. Define dystocia, and enumerate some of the most frequent causes.

Ques. 3. Describe the management of labor in posterior positions of the vertex, both prophylactic and operative.

Ques. 4. Define puerperal infection, naming the principal infecting agents; their most common mode of entrance into the puerpera; the different forms of infection produced by these microbes; the prophylaxis and treatment.

Ques. 5. What circumstances render craniotomy justifiable; the instruments preferred for the operation; its details and after-treatment.

II. Gynæcology.

Ques. 1. Describe the normal position of the uterus, and give its attachments.

Ques. 2. Name the five most common displacements of the uterus, and describe its position in each displacement.

Ques. 3. Define chronic general endometritis; give general symptoms; local symptoms; appropriate local treatment.

Ques. 4. Describe the operation for bilateral laceration of the cervix.

Ques. 5. Define amenorrhœa; give constitutional causes; local causes, and outline its treatment.

VIII. Section on Practice of Medicine.

(Thursday, 12 M. to 3 P. M.)

Dr. R. W. Martin, Lynchburg, Va., Chairman.

The class has the option of any six questions.

Ques. 1. Give the general etiology of migraine, dividing the causes into predisposing and exciting.

Ques. 2. Give the evidences of the hereditary transmission of the effects of alcoholism.

Ques. 3. Describe and explain the pulse in aortic re gurgitation.

Ques. 4. Define vertigo, and give the causes of the gastric, aural and ocular forms.

Ques. 5. Give the morbid anatomy and symptoms of acute general peritonitis.

Ques. 6. Give the symptoms of obstructive jaundice and explain how the symptoms are produced.

Ques. 7. Give the etiology of broncho-pneumonia.

Ques. 8. Give the symptoms of myalgia, and name the three principal varieties.

IX. Section on Surgery.

(Thursday, 4 P. M. to 7 P. M.)

Dr. S. W. Budd, Petersburg, Va., Chairman.

Select any six questions.

Ques. 1. *Chronic Ulcer of the Leg*—Give causes, varieties, treatment in detail.

Ques. 2. *Acute Synovitis*—Give its causes, its symptoms, its treatment.

Ques. 3. *Abscess of Liver*—Give its causes, its symptoms, its treatment.

Ques. 4. Give diagnosis of sarcoma of the breast, and differentiate it from carcinoma.

Ques. 5. Describe the operation of resecting the elbow joint, with dressing and after-treatment.

Ques. 6. Give the causes of ununited fractures and the various methods of treatment.

Ques. 7. Describe the bloodless method of amputation at the hip-joint.

ALPHABETICALLY ARRANGED LIST OF APPLICANTS FOR LICENSE TO PRACTICE MEDICINE, SURGERY, ETC., WHO PASSED SATISFACTORY EXAMINATIONS BEFORE THE MEDICAL EXAMINING BOARD OF VIRGINIA, JUNE 24TH, 1897, AT RICHMOND, VIRGINIA.

Ambler, E. C., Coolwell, Va , University of Va., 1897.
Berry, E. M., Harrisonburg, Va., Bellevue Hosp. Med. College, 1897.
Branch, C. M., Richmond, Va., Non-Graduate.
Blackburn, R. S., Alexandria, Va., Non-Graduate.
Bell, Geo. H., Staunton, Va., University of Va., 1897.
Baughman, Greer, Richmond, Va., Med. Col. of Va., 1897.
Bodow, J. C., Jr., Sanford, Fla., Univ. Col. of Med., Richmond, 1897.
Brown, A. G., Jr., Ashland, Va , Non-Graduate.
Brumfield, W. A.. Mt. Airy, Va. University of Va., 1897.
Bowman, J. L., Cross Keys, Va., University of Va., 1897.
Bridgforth, B. Richmond, Va., Univ. Col. of Med., Richmond, 1897.
Butler, C. S., Bristol, Tenn., Univ. of Va., 1897.
Burton S. H., Stribling Springs, Va., Univ. of Va., 1897.
Banks, McRae C., Madison, Va., Med. Col. of Va , 1897.
Bailey, Louis J. C., Leisenering, Pa., Univ. of Mich., 1888.
Causey, P. P., Suffolk, Va., University of Md., 1897.
Claybrook, A. B., Kinsale, Va. Non-Graduate.
Cutchin, A. P., Augusta, Va., Med. Col of Va , 1897.
Chitwood, W. T., Rocky Mount, Va., Univ. Col. of Med., Richmond, 1897.
Crawford, C. A., Mt. Meridian, Va., Univ. of Va., 1897.
Carter, C. T., Danville Va., Univ. Col. of Med., Richmond, 1897.
Douglas, W. G., Warrenton, Va., Non-Graduate.
Delaney, J. H., Bristol, Tenn., Univ. of Va., 1897.
Dickinson, J. D., Franklin City, Va. Balto. Med. Col., 1897.
DeJarnette, H. M., Lewiston, Va., Univ. Col. of Med., Richmond, 1897.
Drewry, D. R., Richmond, Va., Med. Col. of Va., 1897.
Elliot, H. R., Hillsboro, Va., Univ. of Va., 1897.
Eason, C. F., Hickory, Va., Univ. Col. of Med., Richmond, 1897.
Fife, J. D., University Station, Va , Univ. of Va., 1897.
Ferguson, R., Rustburg, Va., Univ. Col. of Med , Richmond, 1897.
Fuqua, W. B., Fork Union, Va., Univ. Col. of Med., Richmond, 1897.
Gay, Geo. W., Jr., Richmond, Va., Non-Graduate.
Griener, A. B., Rural Retreat, Va , Med. Col. of Va , 1897.
Gordon, J. C., Charlottesville, Va., Non-Graduate.
Harris, L. M., Harrisonburg, Va., Univ. of Md , 1897.
Hartwell, J. H., Roanoke, Va., Univ. Col. of Med., Richmond, 1897.
Holmes, E. A., Tannersville, Va., Univ. of Va , 1897.
Hill, H. H., Locust Dale, Va., Univ. of Pa., 1895.
Henry, H. C., Keysville, Va., Med. Col. of Va., 1897.
Hottel, J. S., Conicville, Va.. Univ. of Va., 1897.
Hank, E. G., Tanners Creek, Va., Non-Graduate.
Hughes, W. H., Jr., Manchester, Va., Leonard Med. Col. of N. C., 1897.
Hiden Joseph, Richmond, Va., Med. Col. of Va., 1897.
Hepburn, S. S., Oliver, Va., Med. Col. of Va., 1897.
Irving, L. M., Irvington, Va., Balto. Univ., 1896.
Jenkins, E. A., Mira Fork, Va., Non-Graduate.
Keel, C. W., Richmond, Va., Med. Col. of Va., 1897.
Knight, W. C., Wiggins Cross Roads, N. C , Med. Col. of Va., 1897.
Koons, H. E., Middleburg, Md., Southern Homœopathic Col., Balto., 1897.
Lush, H. B., Beach, Va., Med. Col. of Va., 1897.
Lewis, T. W., Lynchburg, Va., Univ. of Va., 1897.
Laycock, J. Y., Norfolk, Va., Howard Univ., D. C., 1895.
Lofton, Lucien, Emporia, Va., Southern Med. Col. Atlanta, 1894.
McNamara, Wm. A., Pocahontas, Va., Univ. of Pa., 1894.
McCulloch, Chas., Howardsville, Va., Columbia Univ., 1897.
Moore, Chas. L., Richmond, Va., Univ. Col. of Med., Richmond, 1897.
McGowan, Wm. R., Richmond, Va., Med. Col. of Va., 1897.
Miller, J. J., Haywood, Va., Non-Graduate.
Mallory, J. S., McDowell, Va., Non-Graduate.
McKee, T. R., St. Clair's Bottom, Va., Univ. Col. of Med. Richmond, 1897.
Macdowald, C. D. J., Norfolk, Va. Col. Phys. and Surg., Baltimore. 1897.
May, I. N., Richmond, Va , Univ. Col. of Med., Richmond, 1896.
Macon, W. D., Charlottesville, Va., Univ. of Va , 1897.
Michie, W. T., Charlottesville, Va., Univ. of Va., 1897.
Montgomery, B. F.. Stephen City, Va.. Univ. of Va., 1896.
Moyers, B. F., Doresville, Va., Balto. Med. Col., 1897.
Miller, R. W., Richmond, Va., Univ. Col. of Med , Richmond, 1897.
Machant, C. D., Lot., Va., Univ. of Md.
Newton, S. W., Shawsville, Va., Univ. of Pa., 1895.
Nicholson, H. G., Richmond, Va., Univ. Col. of Med., Richmond, 1897.
Neblett, C. P., Burts, Va., Med. Col. of Va., 1896.
Peple, W. L., Richmond, Va., Univ. Col. of Med., Richmond, 1897.
Page, Mann, Cobham, Va., Univ. of Va., 1897.
Phillips, H. W., Norfolk, Va., Univ. Col. of Med., Richmond, 1897.
Roope, S. Abigail, Richmond, Va., Southern Homœopathic Col., 1896.
Roberts, J. H., Charlottesville, Va., Non-Graduate.
Ramsey, E. B., McClellen, Va., Univ. of Md., 1897.
Rawles, B. W., Richmond, Va., Med. Col. of Va., 1897
Sexton, J. Z., Marion, Va., Vanderbilt Univ., Tenn., 1897.
Simons, F. D., Columbus, O., Univ. Louisville, Ky., 1893.
Simms, T. J., Jr., Richmond. Va., Med. Col. of Va., 1897.
Sager, C. J., Jadwyn, Va., Non-Graduate.
Schmucker, W. F., Toms Brook, Va., Balt. Med. Col., 1897.
Suddarth, F. S., Monterey, Va., Univ. of Va., 1897.
Seay, C. J., Richmond, Va., Non-Graduate.
Seward, W. W., Surry, Va., Med. Col. of Va., 1897.
Taliaferro, B. L.. Richmond, Va., Non-Graduate.
Thomas, C. M., Healing Springs, Va., Tenn. Med. Col., 1891.
Taylor, R. F., Mannboro, Va , Univ. Col. of Med., Richmond, 1897.
Taliaferro, R. M., Richmond, Va., Med. Col. of Va., 1897.
Tucker, P. E., Lonesville, Va , Med. Col of Va., 1897
Willis, Wm. D., Richmond, Va., Univ. Col. of Med., Richmond, 1897.
Whitehead, F. W., Scotland Neck, N. C., Phys. and Surg., Baltimore.
Wood, W. K., Fentress, Va., Balt. Med. Col.. 1895.
Williams, E. G., Richmond, Va., Univ. of Va., 1897.
White, C. C., Mathews, Va., Balt. Med. Col., 1897.
Williams, J. P., Newport, Va., Univ. Col. of Med., Richmond, 1897.
Williams, W. C., Richmond, Va , Univ. Col. of Med., Richmond, 1897.
Woolwine, A. B., Pearisburg, Va , Univ. Col. of Med., Richmond, 1897.
Woolwine, W. D., Pearisburg, Va., Univ. Col. of Med., Richmond, 1897.
Williams, W. R., Richmond, Va,, Med. Col. Va., 1897.
Williams. G. J., Pounding Mills, Va., Non-Graduate.
Whitehead, R. E., Blossom Hill, Va., Med. Col. Va., 1897.
West, Thos. P., Bellevue, Bedford Co., Va., Med. Col. Va., 1897.

INSTITUTIONS REPRESENTED BY THE APPLICANTS BEFORE THE MEDICAL EXAMINING BOARD OF VIRGINIA, FROM THE ORGANIZATION OF THE BOARD, JANUARY 1, 1885, TO JUNE, 24, 1897.

	Total Number from each Institution.	Total Number Licensed First Examination.	Total Number Rejected First Examination.	Licensed on Second Examination.	Rejected Second Examination.	Licensed Third Examination.	Rejected Third Examination.	Incomplete or Withdrew.
Medical College of Virginia	193	158	29	9	6	3		6
University of Virginia—Medical Department	154	152	2					
University College of Medicine, Richmond	57	50	7	4	1			
Baltimore Medical College and University Col. of Medicine, Richmond	2	2						
College of Physicians and Surgeons, Baltimore	124	91	29	2	1	1		4
University of Maryland	142	108	32	1	3	2		2
Baltimore Medical College	33	13	19	1	6	3	1	2
Baltimore University	10		9	1				
Washington University, Baltimore (Extinct)	1		1					1
National Medical College, Washington, D. C	1		1					1
University of Georgetown, D. C., Medical Department	2	1	1					
Howard University, Medical Department, Washington, D. C	24	5	17		1	1	1	
University of Maryland and Baltimore Medical College	1		1					
Georgetown College, Washington, D. C	1		1					
Jefferson Medical College	38	26	11	2				1
Jefferson Medical College and University of Virginia	1	1						
University of Pennsylvania	18	15	3	1				
Medico-Chirurgical College of Philadelphia	2		2		1		1	
Medical College of Philadelphia	1		1					
Woman's Medical College of Pennsylvania	2		1					1
Hahnemann Medical College and Hospital (Homœop.), Philadelphia	6	4	2					
University of the City of New York, Medical Department	28	17	10		1			
University of New York	1		1					
University of Virginia and New York	1	1						
Bellevue Hospital Medical College, New York	18	17	1	1				
University of Virginia and Bellevue Hospital Medical College	1	1						
College of Physicians and Surgeons, New York	10	9	1	1				
Geneva Medical College, New York (Extinct)	1	1						
College Physicians and Surgeons, New York, and University of Va	1	1						
Long Island College Hospital, Brooklyn	4	2	2					
Yale Medical School, New Haven	1	1						
University of Vermont, Burlington	4	2	2	1				
Miami Medical College, Cincinnati	2	2						
Columbus Medical College	3	2	1					
Homœopathic Hospital College, Cleveland	2	2						
Pulte Medical College, Cincinnati (Homœopathic)	1	1						
Louisville Medical College	17	7	9	2	1		1	
University of Louisville, Medical Department	16	11	5					
Kentucky School of Medicine, Louisville	8	7	1					
Hospital Medical College, Louisville	8	5	3	1				
Vanderbilt University, Nashville	6	5	1					
University of Tennessee, Nashville	2	2						
University of the South, Sewanee, Tenn	1		1					
Leonard Medical College, Raleigh (Colored)	22	15	7	2	1			
Medical College of State of South Carolina, Charleston	3	2	1	1				
Southern Medical College, Atlanta	4	2	2					
Atlanta Medical College	2		2					
Tulane University, Medical Department, New Orleans	3	3						
University of Louisiana (probably Tulane University)	1	1						
Medical College of St. Louis (Extinct)	1	1						
St. Louis Medical College, Missouri	1	1						
Detroit Medical College, Michigan	3	2	1	1				
University of Michigan, Medical Department, Ann Arbor	5	5						
Michigan College of Medicine and Surgery, Detroit	3	2	1					
Chicago Homœopathic Medical College	3	2	1					
Hahnemann Medical College and Hospital, Chicago	1	1						
University of Heidelburg, Germany	1	1						
St. George's Hospital, London	2	1	1					
King College, London	1		1					
Tennessee Medical College, Knoxville	3		2	1		2	1	
Chattanooga Medical College	1		1		1		1	
Western Reserve Medical College, Cleveland	1	1						
Rush Medical College, Chicago	2	2						
National University of Ohio	1	1						
Eclectic School, Cincinnati	2		2					
Cincinnati Medical College	2	1	1					
Southern Homœopathic Medical College, Baltimore	6	4	2	1				
Woman's Medical College, Chicago	1	1						
Columbian College	6	4	2	1	1			
Jefferson Medical College, Phila., and Baltimore Medical College	1		1					
Harvard Medical College	1		1					
Central Tennessee College	1		1					
Woman's Medical College, Cincinnati	1	1						
Northwest University, Chicago	1	1						
College of Surgeons, London	1		1					
Colleges unknown	7	4	2					1
University of Vermont and Leonard Medical College	1		1					
Columbian Unviversity, D. C	1	1						
Non-Graduates	151	49	91	3	3		1	8
Totals	1,196	831	332	37	27	12	7	27

Nos. of examination papers.	List of Institutions Whose Graduates were Rejected by the Medical Examining Board of Va., at its Regular Spring Meeting, June 22-24, 1897, With Percentage Marks received in each Section. College of Graduation.	Hygiene and Med. Jurisprudence.	Chemistry.	Anatomy.	Physiology.	Histology, Pathology, Bacteriology.	Obstetrics and Gynecology.	Materia Medica and Therapeutics.	Practice.	Surgery.	Total.	Average Percent'ge	Remarks.
4	Non-Graduate	77½	80	52	55	50	37	62	50	31	494½	54 17/18	
10	Non-Graduate	88	85	53	80	70	72	69½	78	15	610½	67 15/18	
11	Non-Graduate	83½	83	55	80	70	62	72	71	22	598½	66½	
14	Non-Graduate	86½	80	68	78	60	73	68	67	49	629½	69 1/18	
15	University of Maryland, Baltimore	81½											Withdrew.
16	Medical College of Virginia	86½	70	50	70	55	69	70	75	61	606½	67 1/18	
17	Non-Graduate	83½	74	56	65	65	68	70½	69	39	590	65⅝	
29	Non-Graduate	76½	72	62	70	68	64	59	66	45	582½	64 15/18	
36	College Physicians & Surgeons, Baltimore	87½	80	59	78	60	84	68	75	59	650½	72 1/18	
44	Louisville Medical College	60½	40	45	55	35	53	50½	71	45	455	50⅝	
48	Non-Graduate	77¾	80	66	80	70	83	85½	90	32	664¼	73 29/36	
49	Non-Graduate	84½	76	66	89	70	76	72½	79	50	663	73 2/3	
50	Non-Graduate	75½	70	64	77	52	74	73	75	33	593½	65 7/18	
62	Non-Graduate	87¼	60	68	70	65	79	74	68	53	624¼	69 13/36	
65	University of Maryland, Baltimore	91	79	58	82	70	84	76½	75	43	658½	73 1/6	
66	Baltimore Medical College	78½	48	45	75	65	72	60½	75	42	561	62 1/3	
68	Non-Graduate	90	85	50	77	73	66	86¾	75	50	652¼	72 19/36	
71	Non-Graduate	86½	80	51	83	55	71	85¾	69	44	625¼	69 19/36	
74	Howard Univ., Med. Dept., Washington, D.C.	88	90	37	50	40	76	78	75	60	594	66	
76	University of Virginia	92½	87	50	80	65	80	64	60	63	641½	71 5/18	
78	Leonard Medical College, N. C.	80	76	47	77	45	76	67½	80	61	609½	67 13/36	
81	Non-Graduate	93½	86	53	78	72	48	74	78	57	639½	71 1/18	
82	Non-Graduate	87½	88	50	75	75	76	75½	77	62	666	74	
83	Univ. of Vermont and Leonard Med. Col.	82½	84	58	75	45	80	62½	65	37	589	65⅝	
90	Non-Graduate	92	95	62	70	45	81	58	.....	47	550	68¾	
93	Non-Graduate	85	80	66	77	45	84	68½	75	77	657½	73 1/18	
96	Long Island College Hospital, Brooklyn	81	60	59	75	50	76	71¾	70	56	538¼	66 13/36	
99	Non-Graduate	79½	50	43	70	65	70	62	60	42	541½	60 1/6	
100	Non-Graduate	95	85	54	70	69	75	69½	67	72	656½	72 7/18	
108	University of Baltimore	90	75	48	75	55	80	76	70	78	647	71⅝	
110	University College of Med., Richmond	88	85	45	75	62	78	62½	68	69	632½	70 5/18	
115	Non-Graduate	83½	90	46	60	66	56	66	57	50	574½	63 5/18	
122	Medical College of Virginia	84	90	65	75	70	75	71½	75	55	660½	73 7/18	
125	Non-Graduate	75	75	76	80	70	82	79	72	43	652	72¾	
127	University of New York City	76	55	46	60	25	75	55½	65	36	493½	54 5/18	
128*	Non-Graduate	87	70	44	85	74	83	74	71	88	676	75⅓	
135	University College of Medicine, Richmond	80	90	47	75	65	77	73½	65	80	652	72½	
139	Woman's Medical College of Pennsylvania	63¼											Withdrew.
141	Non-Graduate	87½	80	52	78	74	77	86	78	50	662½	73 1/18	
143	Non-Graduate	91½	85	52	78	70	76	74½	75	65	667	74 1/9	
144	Non-Graduate	86½	50	54	75	55	77	16	66	38	517½	57 1/18	
148	Non-Graduate												Withdrew.
149	College Physicians & Surgeons, Baltimore				82	75	87	86	78	62			Incomplete
150	Non-Graduate				55	55	79	84	78	80			Incomplete

*No. 128 makes the required average, but failed to make 45% on Anatomy.

Institutions Represented by Applicants who came before the Medical Examining Board of Virginia, Spring Session at Richmond, Va., June 22-24, 1897.	Total Number of Applicants from each College.	Total Number of Applicants Licensed from each College.	Total Number of Applicants Rejected from each College.	Withdrawals.	Incomplete.
Southern Medical College	1	1			
University of Louisville, Kentucky	1	1			
Vanderbilt University, Tenn	1	1			
University College of Medicine, Richmond	24	22	2		
Medical College of Virginia, Richmond, Va	23	21	2		
University of Pennsylvania, Philadelphia, Pa	3	3			
Columbian University, D. C	1	1			
University of Maryland, Baltimore, Md	6	4	1	1	
College of Physicians and Surgeons, Baltimore, Md	4	2	1		1
University of Michigan	1	1			
University of Virginia, Charlottesville, Va	20	19	1		
Louisville Medical College	1		1		
Tennessee Medical College	1	1			
Baltimore Medical College, Baltimore, Md	6	5	1		
Leonard Medical College, N. C	2	1	1		
Howard University	2	1	1		
Baltimore University	2	1	1		
University of Vermont and Leonard Medical College	1		1		
Long Island College Hospital, Brooklyn, N. Y	1		1		
Southern Homœopathic College, Baltimore	2	2			
Bellevue Hospital Medical College, New York	1	1			
University of New York City	1		1		
Woman's Medical College, Pa	1			1	
Non-Graduates	42	15	25	1	1
Total	148	103	40	3	2

MEDICAL AND SURGICAL SOCIETY OF DISTRICT OF COLUMBIA.

Meeting of May 20th, 1897.

Dr. O. A. McKimmie read a paper on—

Hypertrophy of the Lingual Tonsil and Its Treatment. [See page 257.]

DISCUSSION.

Dr. C. W. Richardson said the disease was very rare, and sometimes had no symptoms. It required no treatment in men, and but occacasionally is it to be treated in women, and then only on account of the irritation at the base of the tongue. He had found nitrate of silver of no service, and whatever benefit followed its use, he thought was purely mental. Had used actual and chemical cautery on account of pressure made upon the epiglottis by the growth. Had found the guillotine and tonsillotome to be attended with very great pain.

Dr. Jas. D. Morgan spoke first of the histological and pathological conditions at the base of the tongue: The lingual tonsil is a flattened mass of connective and lymphoid tissues at the base of the tongue impinging on the valleculæ linguæ. The mucous membrane of this region is a continuation of the buccal membrane, and has a number of glands in the submucous tissue. The membrane is formed into folds, covers the valleculæ linguæ, and extends from the base of the tongue to the epiglottis, helping to form the glosso epiglottic ligament, which aids in lifting the epiglottis in phonation. The glandular structure is plentifully supplied with blood, and the veins, by their peculiar arrangement around the arteries and their unusual method of return, are more apt to lead to engorgement and cause great swelling of the adjacent tissues, which are naturally so thick and dense.

Heymann first described the morbid symptoms with pathological conditions at the base of the tongue, but it was Morgagni, Wharton and others who noted the similarity between the tissue at the base of the tongue and pharyngeal and "palatine" tonsils. Kölliker has shown them to be of lymphatic tissue, and spoke of a "girdle" being formed in this region from the continuity of the epiblast and hypoblast at the fauces. Recently, from the atten tion given to the subject by Lennox Browne, Bosworth and Cohen, the literature on the subject is becoming more replete.

The disease is not of a very common occurrence, and is confined to adults almost entirely, and was, in the speaker's opinion, more common in men. Predisposing causes were gout, rheumatism, alcoholism, chronic constipation, hæmorrhoids, and concomitant diseases. Also it might come from contamination of the buccal fluids. Amenorrhœa, menorrhagia and their various neuroses were exciting causes.

In most people, there was a slight hypertrophy found, and it was only when the glosso-epiglottic fossæ became filled and impinged upon the epiglottis that we had all the annoying symptoms of a dry, tickling, irritating cough; a sense of fullness and desire to swallow—"empty swallowing" (Cohen). The voice became weak, and there was a constant desire to clear the throat, with the viscid mucus sometimes tinged with blood.

A laryngoscopic examination shows readily the condition, and coupled with the symptoms, renders a diagnosis easy. Varicosites at any part of the body or cardiac weakness (Dickson) may aid one in diagnosis. The venous thrill and tenderness over the throat are spoken of. Seifert applies cocaine to the part, that he may discriminate the trouble.

There is a tendency to recurrence after treatment, which may be palliative, active, or radical. Astringent and sedative gargles may be used, or a more active course of applications of acetic or chromic acid, iodine, nitrate of silver. Some few cases require the snare, or the redundancy may be removed by scissors.

Dr. Sohon spoke from the standpoint of the general practitioner, dwelling upon the physiology of the tonsil.

Dr. McKimmie, in closing, said most of his cases were in men, and in many cases had used nitrate of silver with very beneficial effect.

Labor Pains—Antikamnia for.

Of the so-called "essentials for the obstetric bag," antikamnia is taking high rank. Dr. H. C. Reemsnyder, of Philadelphia, says ten grains, repeated, if needed, in two hours, relieves the unnecessary, annoying pains of labor, while the uterine contractions of true labor pains become firmer. In the *Woman's Medical Journal*, Dr. R. B. McCall, of Hammersville, O., says that, where there is unusual suffering in the second stage, with nagging pains, frequent or far apart, "accompanied by nervous rigors and mental forebodings, one or two doses, five grains each, of antikamnia promptly change all of this. Indeed, in any case of labor, small doses are helpful, confirming efforts of nature, and shortening the duration of the process." Such experiences are now common.

Analyses, Selections, etc.

Various Surgical Treatments of Retention of Urine by Hypertrophy of the Prostate.

Dr. Alejandro Settler, of Paris, contributes an excellent review of this subject to *El Siglo Medico*, of Madrid, July 11, 1897. We are indebted to our generous friend, Dr. George Foy, of Dublin, Ireland, for its *translation*.

The modern surgeon is seeking to find a suitable method by which he may liberate from certain death those unhappy prostatics who lived condemned. Although otherwise in good health, they are victims to retention of urine, more or less complete. But, unfortunately, all the known remedies and operations have failed to produce the much desired result. Coming into notice, they are tried, found wanting, and pass into oblivion.

There are many methods employed to day, from the passing of a catheter to the total extirpation of the prostate; but so diverse are the opinions of surgeons on this subject, that it appears to me to be useful for the majority of my readers and of practitioners to know the value of each one of the methods employed and the clinical results obtained.

The practice described and the methods suggested for the treatment of retention of urine, in consequence of hypertrophy of the prostate, is an indication of urgency in which all are interested.

This affection is encountered in large cities, in which it comes under the charge of the specialist, and also in villages, in which the local surgeon must relieve the patient or death ensues. As says Dionis, "The treating of this class of sick prostatics, who have to micturate or die, and the physician—before that he crosses his arms, believing the patient was dying—should be instructed in all that was possible to save the life. This intervention is, consequently, one of urgency, as is tracheotomy, for instance."

It is of this I would speak, to resume, of all the writing during these last years on this subject, and I went, during the two years 1896 and 1897, in the hospitals and clinics of Paris, in which, during the time, I assisted in the genito-urinary department of the Necker Hospital, under the care of my master, Guyon.

The contractility of the bladder in prostatics.—In those suffering from prostatic disease, I would call attention to the deficient contraction of the bladder, a fault of contraction which bears no relation to the obstacle produced by the hypertrophy of the gland. To what is this phenomenon due? Senor Lannois, under the direction of Professor Guyon, made a series of experiments, from which he has been able to give a solution of this question. In fact, the fault of contractility is not only due, as has been suspected, to the result of the unending struggle between the bladder which contracts to expel the urine and the prostatic hypertrophy which offers the obstruction in the urethra. More than this, the deficient contraction is due to general arterial sclerosis, which in the bladder, as in the kidneys, has been demonstrated in the above-mentioned histological studies. These conclusions have been confirmed by the tracings of the sphygmograph in 23 patients with prostatic hypertrophy by Vignaud, who has seen the greater number of them to be suffering from atheroma.

The difficulty of passing the catheter.—Surgeons recognize in a very clear manner these difficulties, when in this day McGiel and Harrison, for example, believe that there are many cases in which it is impossible to pass the catheter; others, among whom Guyon, hold that there are very few cases in which the catheter cannot be passed. According to McGill, there are a large number of prostatic cases who are deficient in skill, and who, being timorous, never learn to use a sound or catheter, and who are of necessity constantly in care of a surgeon. In these cases, he considers supra-pubic prostatectomy the true solution.

Harrison dwells on the necessity of prostatectomy or prostatomy in all cases in which there is difficulty in passing the catheter, or in those cases in which catheterism causes hæmorrhages. The school of Necker is not so radical, and until the last moments resorts to catheterism, not looking upon any other operation as called for.

The distinct operations employed to combat with retention of urine in those suffering from prostatic enlargement, are as follows:

1. Catheterism.
2. Perineal orifice.
3. Puncture of the bladder.
4. Electrolysis.
5. Prostatomy or prostatectomy.
6. Supra-pubic cystotomy of Poncet and of McGuire.

Of these six operations, we will study but three: catherism, prostatomy, and cystotomy supra-pubic of Poncet and of McGuire. Of the three remaining, the perineal orifice and puncture of the bladder were the basis of the

other treatment, which is more perfect; electrolysis has not given good results.

CATHETERISM.

This is the treatment ordinarily followed in the Necker Hospital, thanks to the skill of Professor Guyon, who, in passing the instrument, is simply perfect. There are few who effectively can, by catherism in bad prostatic cases, easily empty the bladder.

Here is the practice of Guyon. All catheterisms are preceded by an exploration of the urethra by an olive end sound, by which means the position of obstruction is found. If by this the obstacle is found in the enlargement of the prostate, an attempt is immediately made to pass the obstacle with a soft catheter. If, after several carefully made efforts, the sound and the olive end catheter fail to pass into the bladder, a catheter with a large curve, or Mercier's elbow catheter, is tried. The form of this latter is well adapted for the purpose, and its introduction may be facilitated by manipulation with the fingers. To overcome the difficulties, Guyon taught his pupils a really ingenious method. It consists in taking a stylet of the exact form of the catheter and introducing it into the cylinder of the instrument, in this way to secure firmness of the catheter with the soft point or end of Mercier's instrument. In this way he proceeds, pushing the instrument only onward, avoiding all force, and thus relieves the retention.

PROSTATOMY AND PROSTATECTOMY.

The first well considered operation of this nature appears to have been that of Amussat in 1827, of which he says, speaking of a tumor which presented itself in the region transverse of the prostate, in a case of incision into the hypogastric region, where he excised a tumor of this nature with a curved pair of scissors, which operation gave him the idea of so acting towards other tumors.

Without doubt, Mercier was the warmest advocate of prostatomy; happily, his methods were not followed, as they did not give good results. He employed scarification of the valves of the urethra in the prostatic region, an operation which he did not less than twenty-four times. The death of Mercier stopped the performance of the operation.

In the United States, Gonley; in England, Harrison, and in Austria, Dittel, by means of their labors, have given us the knowledge of a new operation in their manual of operation and the clinical results.

They do not all approach the prostate in the same way. Harrison selects the perineum; Dittel, Schmidt, Kümmel and MacGill decide in favor of the hypogastric method.

There are three ways of reaching the prostate, and by each one of these ways it is possible to perform prostatomy or prostatectomy, according as we desire to make simply an incision or select a partial or complete extirpation of the gland. Here then follow—

1. Prostatotomy and prostatectomy by the urethra.

2. Prostatotomy or prostatectomy by the perineum.

3. Prostatotomy or prostatectomy by suprapubic.

Prostatotomy and prostatectomy by the urethra.—The instrument employed by Gonley consists of a gouge with a male and female blade, the latter of which slides into the former. The gouge is curved and its sides plain and smooth. The instrument is a hollow cylinder, in which fits a needle capable of being projected by pressing on the handle of the instrument. This needle fixes the tumor, keeping it raised and immovable during the operation. The curvature of the instrument allows of its passing the transverse ridge of the enlarged prostate. The handle of the instrument, like that of the lithotrite of Collins, is graduated so that the thickness of the hypertrophied lobe of the gland can be measured. During operation, the instrument is introduced into the bladder, and when there the blades are opened, and it is turned so that they point down, and the male blade is then brought behind the hypertrophied lobe, and then the female driven home, so that the obstruction is imprisoned between the blades.

Then the operator should well consider what object he has in view, and make sure that the obstacle is well within the blade of the instrument, which may be ascertained by slight movements of the hand. Being assured that all is well, he transfixes the lobe by pushing forward the needle and presses home the blades.

Gonley, in his cases, kept a catheter in the bladder twenty-four hours. Mercier did not place a catheter in the bladder, but for the first five days after operation he drew off the urine with one. Rottini recommended the galvanocautery, with which he cauterized the prostate, introducing the instrument through the urethra.

Prostatotomy and prostatectomy by the perineum.—Harrison, of Liverpool, has attained the best results with this operation.

1. The form most grave, according to him, from the point of view of prostatic obstruction,

is the most favorable, he says, when the hypertrophy of the prostate is of that form which rises from the bulb, and not from one of its lobules. To approach the thickness of the obstacle, the same Liverpool professor advises the introduction of a catheter into the bladder, and, once in the viscus, to turn the point of the instrument down. Then introduce the finger into the rectum, and by pressing the finger against the point of the catheter, the thickness of the tissue is readily known.

The operation requires the same preparation, position, etc., as median lithotomy. Pass a sound into the bladder until the obstacle is reached; cut the thin cellular tissue and aponeurosis until you reach the urethra membranosa. Introduce the finger into the prostatic urethra and divide the tissues in the middle line; the incision being made by a blunt pointed curved bistuory, and in part by the finger, only a large blunt gorged. It is unnecessary to make the opening larger than will admit the index finger, which is easily filled with a drainage tube, and thus the risk of bleeding is reduced to the minimum. The drainage tubes employed by Harrison are of gum elastic, curved at their extremity, the better to drain the base of the bladder. They are of different sizes and curvature, to allow of their use to different forms and varieties of cases.

These tubes are double; the outer one is fixed, and fills the shield, which holds it in place on the perineum; the inner slides into the outer, and can be removed to be cleaned any time the surgeon considers it necessary. The description of this apparatus and all the details of the operation are fully described in Harrison's book. The great part of the result depends, as the author says, on the after-treatment of the case. The tubes should be retained in place for six or twelve weeks, and, if retained beyond this time, a catheter should be introduced into the bladder by the urethra; or, if the urine pass by the natural passage, the operation is completed. The dressing should not be discontinued until the wound has completely cicatrized.

Some surgeons modify this treatment, of which Watson, of Boston, is an example. He employs a tube of large size and smooth sides carefully placed at its vesical extremity, where it is situated at the lowest part of the fundus, and, according to Watson, it does not interfere with the escape of detritus and is large enough to give passage to any grumous matter. The direction of the tube is such that it is adapted to the end of the urethra, and at the same time the external portion of the tube is parallel to the plane of the bed when the patient is on his back. This position was decided on after an examination of twenty cadavers. And, lastly, the tube adapts itself to all cases, filling a placque in the median line, which is able to assume the proper position and adapt itself to the varying distances between the perineum and the bladder. The placque is retained by means of a pelt and joints.

Schmidt, of Cuxhaven, opens the urethra (prostatic) not alone with a bistuory, but also with a uterine dilator, dilating the wound until the finger can be easily introduced into the wound. Then he introduces a large catheter by the perineum, and retains it in position for five weeks.

Supra-pubic prostatotomy.—According to MacGill, supra-pubic prostatotomy should be performed in the following cases: Growth of the middle lobe of the prostate in the form of a teat, or pedunculated tumors; uniform concentric hypertrophy, which has projected into the cavity of the viscus, resembling the uterus in in the vagina; horseshoe-shaped hypertrophy, causing a marked diminution in the calibre of the urethral orifice.

The initial steps of the operation are exactly similar to hypogastrotomy, with or without the globe of Peterson, although in the Necker Hospital, rectal dilatation is the rule.

Having opened the bladder in the manner which to-day is classic, the sides of the wound are held apart by retractors or chains. When the hypertrophy is recognized and the part examined which formed the obstacle to the urethra, is the part to be excised.

Every surgeon who has practiced this method of incision of the prostate speaks highly of it. Dittel, of Vienna, employs a chain as a snare; Watson by ligature; MacGill generally used the scissors. This extirpation may be done by either one method or the other. It may be done—

1. By excision with scissors.
2. Section by galvano-cautery.
3. Section by the thermo or electro-cautery spoon, and
4. Enucleation, which is especially suitable for interstitial tumors, after the mucous membrane of the viscus and the perilobular capsule have been excised.

Having extirpated that portion of the gland that interfered with micturition and sutured the bladder, antiseptic dressings are to be applied, as in ordinary cases of laparotomy, and arrange one of Perier's tubes in position. As in the hernial operation, so in the supra-pubic

we have seen the best results from a properly adapted tube of Harrison or of Watson. In the proceeding supra-pubic, many surgeons, however, limit their arrangement to a catheter, retained in position for the first three days, which is all right if the patient tolerates it, but it does not always succeed.

For the coming chapter we reserve the description of the most modern and most valuable we know, more perfect than those of preceding surgeons. It is the *supra-pubic cystotomy* of Poncet, which will be treated of with more fulness than those which, up to the present, we have described.

Editorial.

Medical Society of Virginia.

The Twenty-Eighth Annual Session will be convened at Hot Springs, Va., August 31, 1897, and the program indicates that it will continue till September 3d. There appears to be an unusual activity on the part of the younger members of the profession in the organization which is highly commendable and very encouraging. Much of this interest has been stimulated by the untiring energy and influences of the President, Dr. Geo. Ben. Johnston. If members generally would do as he has already done, in inducing their friends to join, not a single worthy regular practitioner in Virginia would be outside of the organization.

The Medical Society of Virginia has exerted strong influences over the profession of the country. Alabama and North Carolina had State Boards of Medical Examiners prior to 1884. But the North Carolina law simply required that those who proposed to join the Medical Society of North Carolina should pass satisfactory examinations before their State Board of Medical Examiners, and gave to such the special advantage of collecting professional fees by law. That Society deserves special mention for then requiring a very thorough examination before securing its certificate of membership; and any who knew the profession of that State at that time could not fail to be impressed by the higher education of members of that Society than those doctors who were not members. Alabama had law enough—in that every doctor in the State had to pass examinations before entering practice; but an applicant for license could practically select the County Board by which to be examined; and thus the law became ineffectively applied. But beginning January, 1885, under a legislative enactment secured by the Medical Society of Virginia, *every one applying for license to practice in Virginia*, had to pass a satisfactory examination before the Medical Examining Board of Virginia. This Board, unlike those of most other States, is elected by the Medical Society of Virginia—there is no politics in its appointment. The Governor has only to commission whom the Society elects. This one fact has always secured for Virginia a most competent Board, whose only aim has been to do right—to guard the interest of citizens from incompetent doctors. The conscientious thoroughness in the discharge of duty is attested by the report of examinations in this issue. It requires no magnifying glasses to recognize the wonderfully improved standard of education of the mass of doctors of Virginia to-day as compared with that usual in the profession prior to the organization of the State Board. Other States at once recognized the value of laws regulating the practice of medicine in their States. The effect has been that there is now scarcely a State in the Union that does not require State Board examinations of those proposing to practice within its limits. The Virginia law did well its part at the time of its enactment; but now other States have made such improvements that it again devolves upon the Medical Society of Virginia to take another advance step and secure a better law than that now on the statute book.

Through the influences of the Medical Society of Virginia, an entering wedge has been placed for securing more satisfactory laws relating to the State Board of Health.

The Medical Society of Virginia has added its influences furthermore to the betterment of laws relating to the care of the insane citizens of the State; and now it is hoped that under proper guidance the plans looking to the securing of more hopeful systems of treating epileptics will be realized.

The Medical Society of Virginia will no doubt take into consideration laws which, under a former political party, placed onerous taxation on doctors in Virginia. At the customary rate of fees of regular physicians accepted as fair and reasonable in every community, it needs no arithmetic beyond the rules of addition to show that the practitioners of Virginia contribute more to charity than corporations and churches combined; and yet, *for the privilege of doing this amount of charitable service to suffering humanity*, an oppressive tax is imposed upon doctors by county, city and State!

Virginia has given to other States many now

illustrious in the profession; and it is a special pleasure to welcome them on their annual visits from all parts of the country. Their coming attracts the visitations of others eminent in the medical world, and thus the annual transactions of the Medical Society of Virginia may be said to compare favorably with those of any other State.

Virginia has long needed its medical history written up. Stimulated by the generous offer of the combined prize of $450, made by three distinguished Virginians—Dr. Joseph Price of Philadelphia, Herbert M. Nash of Norfolk, and Hunter McGuire of Richmond—several exhaustive manuscripts will be turned over to the committee appointed to examine and report upon their merits. The value of such a history is incalculable. Several of the contestants have devoted a great deal of time and ability to the preparation of their papers—not to refer to actual expense. The profession of Virginia is to derive the benefit of their labors. In one manuscript, probably there will be important items not mentioned in another. All of the manuscripts—some of them amounting to hundreds of type-written pages—will be the property of the Medical Society of Virginia. No doubt the Society will select an editorial committee to compile from all the manuscripts a more perfect history than any one can furnish. The essay that may be awarded the honor by the able committee appointed to examine the papers, is generously provided for by the combined amount ($450) of the prize offered. But probably there will be other papers deserving of something more than honorable mention. It is to be hoped that some of the doctors who are able, may contribute a total sum sufficient to award a second and a third prize of at least $100 and $50, respectively.

The time is at hand when the Medical Society of Virginia should make some provision for the relief of its destitute members or their widows and orphans. Dr. Frederick Horner, of Marshall, Fauquier county, Va., has devoted years of earnest effort to the organization of a Medical Aid Society, until he has at length secured some favorable action by the American Medical Association. The charity such a society might dispense would often "save the needy from utter destitution;" and the relief given is not infrequently all that stands between the recipient "and abject poverty." All sorts of fraternities have sick and death benefit features, which are exceedingly serviceable. Who needs such benefits more than the rank and file of our Virginia profession? In doing the vast amount of charity work we do to humanity in general, let us not forget "to visit the fatherless and widows [of our own profession] in their affliction."

Beside the *Address of the President* (Dr. Johnston), and the *Address to the Public and Profession* by Dr. J. Allison Hodges, Richmond, on "*The Forgotten Doctor*," Dr Robert Glasgow, Lexington, will open the *subject for general discussion*—"*Treatment of the Third Stage of Labor.*" Discussion will be continued in the order of recognition of the speakers. Papers and discussions will be called:

Bacteriological Diagnosis—Dr. Ernest C. Levy, Richmond, Va.; *Present Position and Needs of Pathology*—Dr. Charles M. Blackford, Jr., Atlanta, Ga.; *Some Characteristic Symptoms of Iritis which Help in its Differential Diagnosis*—Dr. W. H. Baker, Lynchburg, Va.; *Some Reflex Troubles Caused by Swollen Middle Turbinate Bodies*—Dr. Alfred C. Palmer, Richmond, Va.; *So-called Abscess of the Ear*—Dr. Joseph A. White, Richmond, Va.; *Typho-Malarial Fever*—Dr. Joel Crawford, Yale, Va.; *Some Remarks on Summer Diarrhœa of Children*—Dr. J. A. Anderson, Danville, Va.; *Epilepsy*—Dr. A. L. Hodgson, Baltimore, Md.; *Psoriasis—with a Case in Illustration*—Dr. Arthur Jordan, Richmond, Va.; *Puerperal Convulsions—Prevention and Treatment*—Dr. Walter L. Devany, Wakefield, Va.; *Rupture of the Uterus—Its Etiology, Diagnosis and Treatment*—Honorary Fellow, Dr. George Tucker Harrison, New York, N. Y.; *Placenta Prævia*—Dr. Paulus A. Irving, Richmond, Va.; *Uses of Cocaine in Surgery*—Dr. J. Shelton Horseley, New York, N. Y.; *Pathology and Treatment of Boils*—Dr. Stuart McGuire, Richmond, Va.; *Importance of More Care in the Early Diagnosis of Pelvic Diseases*—Honorary Fellow, Dr. Joseph Price, Philadelphia, Pa.; *Plea for the Earlier Diagnosis and Radical Operation for Cancer of the Uterus*—By Invitation, Dr. J. Wesley Bovée, Washington, D. C.; *Ninety Hysterectomies, with Remarks on Method and Technique*—Dr. Joseph Taber Johnson, Washington, D. C., Honorary Fellow; *Intestinal Paresis after Abdominal Operations*—Dr. Edward McGuire, Richmond, Va.; *Report of a Mixed Group of Interesting Abdominal Cases*—Honorary Fellow, Dr. Wm. L. Robinson, Danville, Va.; *Vesical and Renal Surgery*—Dr. Jacob Michaux, Richmond, Va.; *Have we Found a Radical Cure for Inguinal Hernia?*—By Invitation, Dr. Wm. B. De Garmo, New York, N. Y.; *Substitute for Whitehead's Operation for Hæmorrhoids*—Fraternal Delegate, Dr. Samuel T. Earle, Baltimore, Md.; *Treatment of Angular Deformity of the Knee, with Report of Eight Cases*—Dr. A. R. Shands, Washington, D. C.;

Ptosis of the Abdominal and Pelvic Viscera—Dr. Hugh M. Taylor, Richmond, Va.; *Medical Ethics—As it is Now, and Should Be*—Honorary Fellow, Dr. Robert J. Preston, Marion, Va.; *Waters of the Warm Springs, Virginia, in Health and Diseases*—Dr. Robert F. Williams, Richmond, Va.; *Vomiting of Pregnancy*—Dr. Wm. S. Gordon, Richmond, Va.

Drs. R. M. Slaughter, Theological Seminary, Va., Hamilton P. Howard, Alexandria, Va., and John D. Thomas, Washington, D. C., have promised papers, but have not given titles of same.

Hot Springs is a favorite mountain health and pleasure resort in Bath county, Va., with the usual mail and telegraphic facilities, etc. It is about nine miles from Covington, Va., which is the depot on the main line of the Chesapeake & Ohio Railroad, at which transfers are made to the branch railroad to the Springs. The two hotels and the cottages provide ample accommodations for all expected to attend. *Special per diem hotel rates, $2 per capita*, including each person attending on account of the Society or the Board of Examiners.

It has been impossible to secure uniform RAILROAD RATES. Hence, to avoid misunderstanding and worry at the last moment, each party should make prompt inquiry of his depot agent. In some instances, the usual Summer Virginia Springs round trip ticket may be cheaper.

C. & O. Railway (*on card order*), one fare, round trip, from all points in Virginia and West Virginia.

B. & O. R. R., one and one-third fare, round trip, from points in Virginia and West Virginia north of Strasburg Junction, and from points on the Valley Railroad between Harrisonburg and Lexington to Staunton, Va. (*on card orders*).

R., F. & P. R. R.—Reduced round trip rates from Quantico to connecting points (Doswell or Richmond) with the C. & O. (on *card orders* promised, but not received).

N. & W. R. R.—Round trip rates about a fare and a third to junction points with the C. & O. R. R.

The *A. & D.* and the *A. C. L.*, in Virginia, have agreed to one fare round trip to connecting points.

The *Southern Railway*, one and one-third rate round trip to connecting points on C. & O. R. R.

The Medical Examining Board of Virginia

Will meet at 8 P. M., Monday, August 30, 1897, at Hot Springs, Va., in executive session. Examinations of Applicants for License to Practice in Virginia will begin promptly at 9 A. M., Tuesday August 31, and will continue nine hours daily for three days—three examinations a day as usual. Inquiries relating to this meeting should be addressed to the Secretary of the Board (Dr. R. S. Martin, Stuart, Patrick county, Va.), so as to reach his post office on or before the morning of August 28th, 1897, as he will be at Hot Springs on Monday, August 30th. Applicants will be given the same railway and hotel rates as allowed the Society and its guests, which we publish in this issue.

The Southern Railway Without a Chief Surgeon.

A morning paper of recent date announced the resignation of Dr. C. M. Drake as Chief Surgeon of the Southern Railway; the abolishing of the office of Chief Surgeon, and the publication of an order by the General Manager directing all Local Surgeons to report to the General Superintendent at Washington City. We are astonished at the statement that an office as important to the proper conduct of a department as necessary to the successful management of a great railway as that of Chief Surgeon should be abolished; for if we read the signs of the times aright, the trend in all progressive and up-to-date Railroad Systems is not towards the abolition but toward the creation of Surgical Departments, and the placing of competent medical men at their head. The value of that office as an economic, money saving measure can hardly be questioned by any intelligent railroad manager, who will give the subject thought, and it is not credible that a man as progressive, far-seeing and thoroughly conversant with the needs of an expensive system of railroads as the Vice President and General Manager of the Southern is credited with being, would be likely to take any retrogressive steps in his administration.

For Urticaria,

Gaucher (according to *N. Y. Med. Jour.*, Aug. 7) recommends:

℞ Menthol.. ....1 part.
Chloroform .....
Ether .....
Spirit of camphor..... each 3 parts.

Mix. S: After using as a spray or lotion, dust the part with powdered starch or zinc oxide.

THE

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CHRONIC PULMONARY TUBERCULOSIS.

Its Clinical Course and Symptomatology.

By KARL VON RUCK, B. S., M. D., Asheville, N. C.

[*Concluded from page 250, August 13, 1897.*]

The circulation is early influenced by the pulmonary disease, and already in the incipient stages, the heart action becomes frequently accelerated out of proportion to any existing fever, or to the decline in the physical condition of the patient. In many instances the increased frequency of the pulse which may be particularly observed when the patient takes even slight exercise, precedes all other symptoms.

I have recently reported the case of a patient* who was well nourished, had no cough, with only slight temperature and with but a small area of lung involved, in whom the heart action became exceedingly frequent by the slightest exertions, and simply walking slowly up an easy flight of stairs caused an increase from 50 to 80 beats per minute.

The occurrence of such accelerated heart action in the early stages may, in many cases, find an explanation in the existing anæmia, or in a primarily weak and small heart; but in the case referred to, and in a number of others which I have seen, these conditions, to a degree, to justify the expectation of such behavior on the part of the heart, were apparently not present. In several of my cases blood examination showed nothing abnormal.

Apart from increased frequency, the pulse is usually soft and small; it rarely shows any considerable tension, even in the acute, febrile cases. The more the disease and the exhaustion of the patient advance, the smaller and the more rapid becomes the pulse, and the more readily is it unduly increased by physical and mental exercise.

In cases where the tubercular disease is extensive, the explanation for the accelerated heart action is not so difficult; and, apart from the anæmia and exhaustion, must be sought in the obstructed circulation, and in the absence or loss of compensatory hypertrophy on the part of the right ventrical.

The increased blood tension in the pulmonary artery, especially in still fairly nourished cases, becomes recognizable by the sharp accentuation of the heart sound with the closure of the pulmonary valves—a phenomenon which we rarely miss if we look for it. The obstruction is caused by obliterating arteritis in the branches and arterioles of the pulmonary system within the tubercular area, and also by their compression and distortion from inflammatory products, and the tachycardia is simply the expression of the failing powers of an overtaxed heart.

The statement made by many authors that hypertrophy of the right ventrical is infrequent, can depend upon the fact that it is lost with the progressive emaciation in the advanced stages, and is therefore not found by the pathologist; or it may depend upon faulty management in the earlier stages by which its accomplishment was defeated. In its absence, and with the progressive involvement of other lung portions, the heart becomes less and less competent to maintain the circulation; and even in perfect rest in the recumbent position, it finally fails; and the pulse is permanently small and rapid, while the slightest physical and mental effort must be responded to with increasing frequency of contractions.

From my observation, it appears that many physicians simply take it as a matter of course for a phthisical patient to exhibit these very serious and progressive symptoms on the part of the heart as naturally belonging to the disease, without efforts for their prevention or for their removal; and I have known even those who are otherwise experienced in the treatment of the disease to advise violent physical exercise to patients who, when at rest, showed a

* "The Clinical Value of the Culture Products of the Bacillus of Tuberculosis," *Therapeutic Gazette*, June, 1897.

pulse rate of 120, and in whom the pulse became so frequent after the exercise that it could not be counted.

The blood itself may show alteration in the quantity of hæmoglobin and in the number of red and white corpuscles, one of which, or all, may be below normal; cases of arrested or very slowly progressing disease usually approach a normal blood state, or occasionally even exceed it; but in the active, progressive disease, I have seen the hæmoglobin reduced to 25 per cent. and the red corpuscles to about 33 per cent. of what is usually considered a physiological standard.

That the quantity of blood becomes also reduced is shown by the cold extremities, by the general sensitiveness to cold, and by the imperfectly filled arteries; toward the end, hydræmia is manifested by the occurrence of œdema of the lower extremities and by the general pallor of the skin.

Night sweats.—Patients without fever, or who have only slight fever, without markedly subnormal temperature in the early morning hours, are, as a rule, not troubled by this symptom; neither are night sweats present with the purely tubercular fever, accompanying the eruption of tubercle in a limited area, as the apex of one lung, and with the reactive inflammatory changes which occur in the local tissues.

Night sweats are, of course, not pathognomonic of pulmonary tuberculosis, and occur, for instance, in the convalescence from acute diseases, particularly the infectious ones, with malaria, or with septic processes, and with exhaustion from suppuration in any part. Yet, when they occur in pulmonary tuberculosis, they appear to indicate the absorption of dead, disintegrated, organic matter, or of other toxic products.

We, therefore, observe them more frequently in the latter stages of the disease; but I have almost uniformly noted them to occur also with the first destructive changes in even small and circumscribed tubercular deposits, and in some instances before cough and other symptoms attracted attention to the lung.

Fever is, therefore, almost always a prominent symptom in connection with night sweats, and in many of the cases, where it is apparently absent, close observation shows that considerable rises occur during the night, or during sleep. In a few instances, I noted the absence of febrile temperatures; but in these the temperature became considerably subnormal toward morning.

It may also be presumed that toleration on the part of the fever centre to the toxic substances absorbed has been established, or that under the general exhaustion, the fever subsided, and subnormal temperature were alone responsible for the sweating.

Except in acute, miliary tuberculosis, and in severe septic cases, phthisical patients do not sweat either in day or night time while awake; if they do, it can, as a rule, be attributed to excessive clothing, to injudicious heating of rooms, or to exercise; and while some persons naturally perspire more easily and freely than do others, sensible perspiration while awake and at rest in bed, so as to soak the body linen and bed clothing, does not occur without the influence of drugs or in the collapse which is the result of exhaustion in the last days or hours before death.

When, however, the reflex irritability of the nervous system, and especially of the vasomotor centers, is greatly diminished in sleep, and when these centers have previously been irritated or unduly stimulated by the presence in the blood of toxic products, absorbed from suppurating and disintegrating tissues, and by retained waste products, then the previous tension gives place to a state of relaxation, under which the free perspiration takes place.

It usually stops when the patient is thoroughly aroused; but may recur several times during the same night, and, in bad cases, every time after the patient falls into a sound sleep.

The following table represents twenty-four observations made of the behavior of the temperature before and during the hours of sleep which preceded severe night sweats; the maximum temperatures during sleep were obtained by careful retention of a self-registering instrument in the axilla, with the arm bandaged to the chest.

The especially interesting features of these observations are the considerable rises of temperature, which occurred during sleep in more than half of the cases between the last observation before sleep and the time of awakening, and the total variations in twenty-four hours.

As to the degree of sweating, I found it, as a rule, to stand in relation to the degree of total variation of the temperature, and one of the most severe instances of night sweat I ever saw was the case recorded under observations number three and four, in which the temperature during sleep fell nearly six degrees, with a total variation in the twenty-four hours of eight degrees Fahrenheit. This patient on several occasions required not only a change of all the night clothing and bed linen, but also of the hair mattress, which was soaked so as to be wet on the under side.

TABLE SHOWING TEMPERATURE VARIATIONS DURING SLEEP PRECEDING NIGHT SWEATS IN PHTHISIS.

Observation Number.	Maximum temperature while awake.		Minimum temperature in 24 hours.		Temperature before going to sleep.		Temperature on waking with sweat.		Max. temperature during sleep, Deg. F.	Fall of temperature during sleep. Deg. F.	Range of temperature in 24 hours, Deg. F.	Remarks.
	Time.	Deg.F.	Time.	Deg.F.	Time	Deg.F.	Time.	Deg.F.				
1	5 P.M.	100	8 A.M.	97.6	11 PM	99	3 A.M.	98	101.5	3.5	3.9	
2	8 "	100	7 "	96.2	11 "	99	4 "	97	100	3	3.8	
3	6 "	103	6:30 "	96.5	10 "	101.1	5:30 "	98.5	104.2	5.7	7.9	Septic case, $\frac{1}{100}$ gr. atrop. and $\frac{1}{20}$ strych., at 10 P. M.
4	4 "	104	8 "	96	11:30 "	100	2 "	96.5	101.5	4	8	Same patient as No. 3.
5	8 "	102	8 "	97.6	11 "	99	4 "	99	102.5	3.5	4.9	
6	2 "	102.5	11 "	99	11 "	101.2	5 "	103	103	.....	4	Septic case, temperature rose 1.8 F. during sleep.
7	2 "	99.5	8 "	97	11 "	98.3	4 "	97.5	99.5	2.0	2.5	
8	7 "	104.2	2:30 "	97	11 "	101.6	2:30 "	97	102	5	7.2	
9	1:30 "	102	8 "	100	11 "	99	6 "	100.4	105.5	5.1	5.5	
10	4 "	100.8	6 "	97	10 "	98.6	2 "	99	99	.....	3.8	Temperature rose 0.4° F. during sleep.
11	8 "	100.5	4 "	96.5	10 "	100	4 "	96.5	100	3.5	3.5	
12	6 "	101.5	8 "	97	11 "	99.2	1:30 "	97.5	102	4.5	5	
13	2 "	98.4	6 "	95.4	10 "	98.4	12:30 "	96	98.5	2.5	3.1	
14	2:30 "	99	8 "	98	9:30 "	98.6	11 PM	99.5	101.4	1.9	3.4	
15	8 "	100.6	6:30 "	97	11 "	100	6:30 AM	97	100	3	3.6	
16	6 "	100.2	8 "	98	10:30 "	99 6	1 "	100	103.2	3.2	5.2	
17	3 "	98.4	6:30 "	97.5	10 "	98.4	6:30 "	97.5	101	3.5	3.5	
18	11 AM	105.2	9:30 "	100	2:30 P.M.	104.4	5 P.M.	102.8	106.2	3.4	6.2	Case of acute phthisis, morph. $\frac{1}{4}$ gr., atrop. $\frac{1}{60}$ gr., at 2:30 P. M.
19	11 "	105	1 "	99	9 "	103	1 A.M.	99	105	6	6	Same patient as No. 18.
20	8 "	100.4	8 "	97	10 "	100.3	11:30 P.M.	100	101	1	4	Patient sweat again profusely at 7 A. M.
21	3 "	101	8 "	97.4	11 "	100.6	2 A.M.	100.5	100.5	.....	3.6	$\frac{1}{60}$ gr. strychnia at 11 P. M.
22	4 "	100.4	8 "	96.2	11 "	98	7 "	96.4	98	3.6	4.2	
23	8 "	103.5	8 "	98.8	11 "	102.5	5 "	99	103.5	4.5	4.7	Case of exudative pneumonia, with pleurisy.
24	6 "	99	8 "	95.4	10 "	99	4:30 "	96	100.4	4.4	5	Same case as No. 23 two weeks later

In milder cases, the patient sweats only on the head, particularly the part which rests against the pillow, and on the neck and chest.

The sweat contains nothing characteristic, and neither tubercle bacilli or other pathogenic micro-organisms have ever been found in the collected water. The rapid decline of such patients in strength and vitality is, of course, not so much due to the loss of water, but to the pathological changes which cause it. When severe and often repeated, this sweating becomes one of the most distressing symptoms of pulmonary tuberculosis, and the patients dread to go to sleep.

Their rest is often much disturbed, and, especially in winter, it is only with the greatest care of the room temperature, and with readiness of changes of clothing and of proper attendance, that such patients can be kept from taking cold.

The skin and its appendages present no important symptoms. In cases who suffer from profuse perspiration, we occasionally note the eruption of miliary vesicles upon the skin, which, however, give no special discomfort; but the condition of the skin in any stage of the disease is frequently abnormal, especially in patients who give little attention to its proper care.

In anæmic patients, it is pale, thin, transparent, often showing with unusual distinctness the cutaneous veins and capillaries; in others, it is harsh and dry, and wanting in the resiliancy and pliability which we note in health.

In acute and rapidly progressing cases, having formerly enjoyed a good fat polster, the skin becomes flabby and loose, and, in many instances of rapid emaciation of previously fat subjects, I have seen it hang loose in large folds, upon parts where the fat polster had been the thickest.

There are no characteristic skin eruptions belonging to the disease, but pityriasis versicolor and chloasma are noted more frequently in phthisical subjects than in others.

The occurrence of the former is favored by the application of poultices and irritants to the chest, and also by the occurrence of night

sweats, especially if proper bathing and friction are not practiced, conditions which favor the localization and growth of the parasite.

Thus there is a predilection for its location upon the chest and neck. The yellowish or brownish spots extend and eventually coalesce with others, covering at times quite large irregular surfaces, while eventually the affection extends to other parts of the body which are habitually covered with clothing.

More or less itching may be complained of.

True pityriasis tabescenticum, or tuberculosorum, is quite different, both in cause and appearance. It is not a dermato-cycosis, but a trophic affection, and occurs in cachexias of various kinds. The patches do not show the discoloration of either pityriasis, versicolor, or of chloasma; they are small, rough surfaces covered with loose, dry epithelium, which is continually cast off, and the affection causes no symptoms.

Chloasma is simply a deposit of yellow or yellowish-brown pigment in the skin, and may occur upon any part of the trunk or extremities, and upon the neck and face. In some respects it is the opposite of vitilligo, in which the naturally present pigment disappears. Curiously enough, I have had a patient under my care who had consulted a dermatologist for his facial disfigurement, and who, upon a cursory examination, mistook the case for one of vitilligo; the whole face and neck being involved, with only smaller parts of the pale but normal skin being free, causing a striking contrast with the pigmented parts. The patches in chloasma do not present desquamation.

Bed sores rarely form in phthisical patients.

Somewhat characteristic and of interest are the peculiar *changes of the finger nails*, which in most chronic cases become club shaped, often with enlargement of the distal phalax, over the end of which the nail curves downward, so as to give it a claw-shaped appearance. I have also noted similar changes in the toe nails. *The hair* also shows effects of the failing nutrition, both in acute and in chronic advancing cases. It becomes dry, brittle and lustreless, with a tendency to become gray and fall out.

The symptoms on the part of the nervous system are mostly due to anæmia and to the general failure of nutrition. They consist chiefly of muscular pain and neuralgia. The muscular pains are in some cases quite severe and annoying, and they, as well as the neuralgias, are usually confined to the chest and upper extremities. The cause of the often readily excited reflex contractions of the muscles of the chest, especially of the pectoralis major and minor, under even gentle percussion in emaciated subjects, can be explained in like manner.

The mental faculties are not influenced by the lung disease, and beyond the more ready fatigue from their prolonged exercise and often of an accentuation in the peculiarities of disposition, of more or less loss of will power and self-control (all of which are due to the failing vitality and strength), there is nothing which attracts particular attention.

Delirium is rarely present in pulmonary tuberculosis, except during the last days.

Loss of weight is characteristic of the progressing disease; it is intimately associated with the fever, and, apart from the gastro-intestinal complications, it is greatly influenced by its degree and duration. With the subsidence of fever, or with its entire disappearance, the appetite usually improves, and the weight increases again so that it may reach the normal or exceed it.

With renewed activity of the disease, and with its subsequent arrestment, loss and gain in weight alternate; but eventually it appears to be more difficult to increase it to the former healthy standard, although the afebrile period lasts for a number of months or longer, and the appetite and digestion seem good.

This is probably due to the decrease of ærating surface of the lung and the thereby diminished oxygenation of the blood and of other tissues, a condition to which the organism adjusts itself by a decrease in the quantity of the blood, as well as by a limit of the bulk of tissues to be supplied.

If we attempt to force the further increase of weight in such patients, or if we endeavor to secure gain or to prevent loss in the active course of the disease by causing them to take excessive quantities of food, we occasionally succeed in obtaining deposits of fat, to be soon lost by the occurrence of derangement in the digestive organs, especially of the commonly observed atony of the stomach.

The latter is frequently, if not always, due to either injudicious attempt of forcing the patient's nutrition or to serious errors in diet.

The atony of the stomach naturally leads to prolonged retention of food and greatly favors the occurrence of abnormal fermentation, and eventually of pronounced chronic, gastric catarrh.

These conditions are the more likely to occur in the class of patients under consideration, because of the declining general health, the fever, and the often injudicious exhibition of all sorts of drugs, of which creasote needs to

be especially mentioned when its use is prolonged in large doses.

But to stuff a patient's stomach from morning to night with excessive quantity of food, beyond his power of digestion and assimilation, must in itself end disastrously sooner or later.

Tolerant as the stomach may have been in health to abuses from habitual overeating, or from the in injudicious selection of food, excessive use of alcohol, etc., this tolerance becomes less and less in chronic, febrile disease; and if the patient is urged to eat much and often, and he follow such advice, the result is not so much a gain of lost weight, but the discharge of the unused material, and we observe that such a patient has several copious stools in twenty-four hours, as a rule, only partially formed.

Acute attacks of indigestion occur first only on some particular occasion; intervening between them, there is more frequently a sense of fullness, oppression and drowsiness after eating, which leads to prescriptions of artificial digestive agents, or to the use of alcoholic stimulants and condiments, or to both.

The latter frequently give temporary relief, but eventually they contribute to an increase of the symptoms, and so the case goes on until, either by the physician's or patient's good sense, the forced feeding is abandoned, or until the entire loss of appetite and the occurrence of nausea compel at least a temporary halt.

Under such a course, there may have been a temporary increase in weight; but when the digestive organs have been sufficiently abused, so that fermentation, catarrh, diarrhœa or vomiting occur, the patient loses his gain and a good deal more besides; and often in as many days as it has taken him months to arrive at the end of toleration.

The atony is easily determined when we test the patient's digestive powers with a trial meal. Instead of in five or six hours, the digestive process is not completed until several hours later; decrease of free hydrochloric acid, the presence of lactic and fatty acids, abnormal quantities of mucus, are found when we examine the stomach contents; and in cases of some standing, more or less dilatation can be made out.

Subjectively, these patients complain of fullness and distension, headache, loss of appetite, burning in the stomach, eruptions of gas, and eructations into the œsophagus or mouth of bitter, sour stomach contents. The bowels are obstinately constipated, with occasional attacks of diarrhœa intervening; there is a bad taste in the mouth, and the tongue is usually coated.

When such a state of the digestive organs is present, the outlook is not a very happy one as to the eventual recovery from the lung disease; and while there is no end to the remedies and methods for the cure of gastric catarrh, and atony, in the written pages of text-books and monographs on the subject, the quick reversal of this state of affairs to the return of normal digestion, or to a degree sufficient so as to regain the loss, and to maintain the patient's nutrition, is one of the most difficult problems we have to face in the treatment of such phthisical patients.

If the patient did not have pulmonary tuberculosis, the outlook for recovery from the gastric complication would of course be better, and in cases in which the disease is at a standstill, the chances are not so bad; but very often the digestive organs give out completely, just at a time when the disease is in a progressive stage, and when there is fever, and in not a few cases the failure in nutrition, by reason of the complication, seems to be responsible for renewed activity and extension of the tubercular process.

The urine presents nothing beyond the changes we note in connection with fever, and with the disturbances of the digestive organs. In afebrile cases, free from gastric complications, it is normal in color, quantity and quality. Under the use of large doses of creasote, I have occasionally observed it to become slightly bloody and to show small quantities of albumen, but these symptoms disappeared when the remedy was intermitted or when the doses were materially reduced.

So long as the disease does not extend beyond the lungs, nor induce degenerations in distant organs, the heretofore described symptoms occur in various degrees and combinations, receding and increasing as the case progresses in a favorable or unfavorable direction, and subsiding entirely for shorter or longer periods, or permanently if the tubercular process is arrested and a real cure results.

Often the arrestment or supposed cure proves illusory, partly because the renewed activity occurs independently and is beyond the control of either patient or physician; more frequently, however, because the patient returns to a mode of life and conduct entirely at variance with the essentials to be observed in order to secure permanency, which cannot be presumed to exist for at least three to five years after all active symptoms have disappeared.

Thus relapses are frequent, almost the rule, and each serious relapse makes the future

prospects less favorable and more uncertain; and by the time the usually optimistic patients have learned, from individual experience, the conditions for a cure, and are ready to comply with them, it is beyond their accomplishment, either because of the advanced condition of the pulmonary disease, especially from the occurrence of mixed infection, or because the larynx, intestine, or other important parts have been involved in the tubercular process, or both.

SUPRAPUBIC CYSTOTOMY FOR STONE—SOME COMPLICATIONS.*

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On May 22, 1897, I did a suprapubic cystotomy for stone on Paul A., white, age 16. After cutting through the abdominal parietes, I found the peritoneum presenting itself in front of the bladder, almost touching the pubic bone. It was some time before I was certain that the peritoneum was far enough out of the field of operation to make the incision into the bladder without doing harm to it; but this was finally accomplished, and without further trouble, a small mulberry calculus was removed. A catheter was placed in the bladder, and iodoform gauze loosely packed around it to favor rapid and thorough drainage; and a stitch was taken in the upper angle of the wound, extra gauze being placed here to protect the peritoneum as well as possible. The patient was put to bed in good condition.

The usual preparatory treatment was administered, the bladder being washed out just before the operation, and filled with sterilized water, and the rectal bag was used.

The patient did well until 6 A. M., when he became restless and suffered pain in the abdomen; pulse, 98; temperature, 101.4°. At 12 M., pulse 110, temperature 103.2°, with all the symptoms of septic infection of the peritoneal cavity, viz.: distended and rigid abdominal muscles, face flushed and anxious, nausea, etc. It was determined to open the abdomen immediately. The bladder was first washed out and the incision, which had been made in the bladder at the first operation, was closed with interrupted silk sutures; a catheter was placed in the uretha to insure drainage and to prevent the urine from soiling the peritoneum and wound after it had been washed and dressed.

On opening the abdominal cavity, the visceral and parietal pelvic peritoneum was found inflamed and bathed in a dirty sero-purulent fluid, an evidence of fibrino-purulent peritonitis. Near the bladder, the peritoneum looked dark and very ugly, and in a few hours, without irrigation and drainage, would have been attended by diffuse suppuration or septic peritonitis. The cavity was irrigated for some time with hot sterilized water. The lower end of the peritoneal wound was closed with a continuous silk suture; the cavity well drained with iodoform gauze, and silk-worm sutures, placed in such a position as to close the abdominal wound after removal of the gauze. The patient was put to bed in a fairly good condition; pulse 120, temperature 101.2°. He rallied well with a steady decrease of temperature until May 26, at 2.30 P. M. The drainage had ceased, the gauze was removed, and the abdominal wound closed; temperature 100.6°, pulse 88, respiration 26. By 7.30 P. M., temperature 102°, pulse 89, respiration 26. A dose of salts was given, and at 9 P. M., an enema was administered with good effect, reducing the temperature to 100.8° by 10 P. M.

As he had been much nauseated, the patient was fed and stimulated by enemas. The bladder commenced to drain through the suprapubic wound on the sixth day, after operation, showing that the sutures in the bladder had given way. The catheter was removed from the urethra. The abdominal wound soon became infected and sloughed somewhat. The abdominal stitches were removed on June 2d, and the wound dressed with chloral solution. From this time, the temperature varied from 98.8° to 99.6° until June 17, when, at 6 A. M., the condition was temperature 101°, pulse 102, respiration 24; at 5 P. M., temperature 103.6°, pulse 116, respiration 26; delirious, and in a condition of profound sepsis. The origin was difficult of location. When not delirious, he would complain of great pain in the head, back and abdomen, and of nausea. Refusing all nourishment, he was fed by nutritive enemas; and also was given one grain of calomel every hour until six grains had been taken; then a full high enema was given which proved very effective.

June 18, 9.15 A. M., temperature 100°, pulse 105, respiration 24; complained of feeling chilly, still nauseated and suffering pain in his head and abdomen; 5 P. M., temperature 103°, pulse 100, respiration 26. This condition continued, with morning temperature about 100°,

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and afternoon temperature 103°, until June 21, at 3.30 P. M., when he became very restless and weak, suffered intense pain in his back in the region of the right kidney, aching in his limbs, head and abdomen; pulse 120, temperature 104°, respiration 34. Sponge baths of iced water and alcohol were ordered to be given every two hours, and the nurse was told to push stimulants and nourishment. The next morning at 8.30, a great deal of pus escaped from the suprapubic wound, and continued for several days. Whenever an enema was given to wash out the bowel, he would pass urine through the urethra, which would be filled with pus. Temperature remained up until June 23, 4 A. M., when his condition improved. He looked and felt better; temperature 100°, pulse 84, respiration 22. June 25, he again suffered from absorption of pus, temperature going up to 103.4°. The wound was washed out, as had been done before, with peroxide of hydrogen, every six hours. By the 28th, the temperature was normal, but would vary during each day, going as high as 100°.

The poor little fellow's troubles had not yet ceased, for on July 7th, he had another rise of temperature, it being at 6 P. M., 103.8°, with all symptoms of sepsis. The wound was draining well and freely, so another focus of infection had to be sought. Later in the evening he passed a large quantity of decomposed mucus from the rectum, and continued to do so three or four times daily for several days, the temperature varying, during this time, from 101.5° to 103.8°. The trouble in the rectum was due, no doubt, to the effect of the nutrient enemata he had been having so continuously during his illness. After washing out the bowel for several days, the temperature was again brought down to normal by the 10th, remaining so until July 14th, when it again rose to 102.6°, from the same cause in the bowel. After washing out the latter for a few days, it fell to normal and remained so. To-day he was removed to his home in this city with the abdominal wound nearly healed, water being passed *per via naturalis*, and in an apparently good condition after nine weeks' illness.

Several interesting points might be brought out in reviewing this, but, in concluding, I will only refer to two:

1. Suppurative septic peritonitis may follow suprapubic cystotomy without mechanical injury to the peritoneum.

2. The early, prompt and thorough flushing of the abdominal cavity followed by drainage for suppurative septic peritonitis, will save life, where a few hours delay would only bring surgery into disrepute, and the patient's life would be doomed.

2720 *East Broad Street.*

RELATION OF THE LIVER TO DISTURBANCES OF DIGESTION IN CHILDREN.*

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The large relative size of the liver in infants and children is a matter of great importance in an attempt to consider the relation of this organ to digestive disturbances. It is to be remembered that the weight of the liver in infancy is about one-twentieth that of the body; in childhood or at puberty it is about one-thirtieth; while in adult life it is one-thirty-fifth, in middle life one-fortieth, and in old age one-forty-fifth.

The figures suggest at once the greater importance of considering the hepatic functions of children. There can be no doubt that a careful study of these functions and their relative greater influence in the metabolic changes in infancy will explain many of the indigestions, nutritive disturbances, cachexias, so-called diatheses, and the like, with which we meet in pediatric practice. It may be easy to decide that the patient is suffering with indigestion, but to discover the *cause* of that indigestion is not always so readily compassed. The patient's friends may be satisfied with the *what* in the case, but the physician should not stop short of the *why*. A brief review of some points connected with the functions of the liver and their effect upon digestion will make clear, in part at least, the object of this paper.

It is not necessary here to enter into a discussion of all the functions of the liver. We are interested mainly in two—the secretion of bile, and the transformation of food-stuffs into material suitable for the constructive metabolic changes of the body.

Any condition which interferes with the proper action of the liver, will disturb the processes of digestion. These conditions, for present purposes, may be arranged in five divisions: 1, Abnormalties; 2, Enlargement; 3, Inflammations; 4, Contractions; 5, Functional or Neurotic Derangements.

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(1) *Deficiency in the number of lobes* is the only abnormality which is likely to stand as a cause of digestive disturbance in children. With such a condition, the emulsification of fats may be deficient, and with accompanying increased intestinal fermentation, flatulent dyspepsia, chiefly intestinal, may cause distress and induce constipation. Such children appear under-nourished; the color of the stools too light.

(2) *Enlargements of the liver* exert a much greater influence upon digestive processes, and are of frequent occurrence. An *enlargement due to fatty infiltration*, like that produced by hydatid cyst, may interfere with hepatic function by pressure upon the liver cells; and by diminishing the biliary secretion, thus restrict emulsification of fats, and reduce the changes by which the diastatic ferment in fresh bile transforms starch and glycogen into sugar. *Fatty and amyloid degeneration* may cause an enlargement which produces dyspeptic troubles by diminution, or failure of biliary secretion which results from destruction of the hepatic cells. Cases of indigestion and chronic intestinal catarrh, due to fatty liver, have been seen in new-born infants and babies under one year. The digestive derangement in such conditions is permanent, but efforts to relieve the patient by a careful regulation of diet will do much toward palliating his sufferings.

An *enlargement of the liver due to passive congestion* resulting from pulmonary, cardiac or renal disease, is generally accompanied by gastric derangement often functional but likewise frequently structural. The secondary congestion of the gastro-intestinal mucous membrane which occurs in these conditions is the immediate cause of much of the distress; but the large liver, with its derangement of function, is responsible to a degree for the occurrence of the coated tongue, anorexia, nausea, vomiting, flatulent dyspepsia, constipation, intestinal indigestion, light-colored stools, gastro-intestinal catarrh, hæmorrhages from the stomach, and other derangements which prevail in these cases. Sometimes the aversion to meat may be as marked in such cases occurring in older children as it is in cases of gastric cancer.

It may be of service in attempting to arrive at a correct diagnosis in such cases, occasionally, to remember that amyloid change, like the early stage of fatty infiltration or degeneration and atrophy, is most marked in the external zone; active congestion and waxy degeneration in the middle zone; while in severe cases they may all spread to the internal zone of the lobule, where passive congestion ordinarily occurs. These facts may be more useful to us if we bear in mind that the outer zone is supplied by branches from the *portal vein*, the middle zone by vessels from the *hepatic artery*, and that the internal zone is characterized by the distribution of the *hepatic vein*.

Carcinoma and sarcoma produce digestive disturbances partly due to enlargement of the liver. Abscess acts in a similar way.

How these different forms of enlargement of the liver affect digestion, is a matter of great interest and importance in the question we are discussing; but a full development of this subject would require too much space and time to be attempted in a brief paper, and a bare suggestion of the lines of study involved must suffice. A mild congestion of the liver, especially an arterial congestion, may not pass to a state where much interference with hepatic function is reached; but a severe congestion, especially a passive congestion resulting from pulmonary or cardiac disease, may so interfere with the functions of the liver that nutrition of the body is deranged not only by the failure of proper hepatic transformations of the food products carried to the liver, but also by failure of the proper digestion of the food in the intestines before it enters the portal circulation.

A disturbance of the hepatic function in these cases, particularly in tumors and degenerations, may result from pressure or destruction of hepatic cells by degeneration. The result of such processes would be diminished biliary secretions. Now, we know that the bile has three functions which serve important purposes in digestion, and prevents gaseous disturbances in the refuse from digestion in the intestines. These functions are: (a) the diastatic action of its peculiar ferment; (b) its emulsifying action on fats; (c) its antiseptic action in the intestines. In view of these facts, it is not surprising that we meet with so much gastro-intestinal disturbance and so many cases of indigestion and flatulency among children in instances of liver enlargement. It is more marked than in adults, frequently owing to the difference in food.

(3) Inflammations of the liver and biliary ducts and gall-bladder all affect digestion. Acute inflammation (abscess) has been mentioned as an enlargement of the liver and chronic hepatitis (cirrhosis) may be considered among the contractions of this organ. Cholecystitis is so rare in children that little interest attaches to its influence upon digestion. Catarrh of the ductus cholodacus communis is of more common occurrence, however, and frequently is a complication of, or is complicated

by duodenitis. Mild cases may pass unobserved, the patient suffering with such slight digestive disturbance that the physician is not called unless the ailment is prolonged. Jaundice does not always occur, and perhaps nothing can be discovered which will enable one to make a positive diagnosis. A tender epigastrium, often slight pain, a muddy complexion, a slightly tinged or dull conjunctiva, with a dry harsh skin, accompanied by restlessness or itching and attendant digestive disturbances —anorexia, nausea, possibly vomiting, eructations, flatulency—will, however, suggest the presence of this morbid condition, in the absence of more positive signs of other ailments.

(4) The effect of contractions of the liver upon digestion is frequently very marked. To this division belong cirrhosis and acute yellow atrophy of the liver. Some of the digestive disturbances, which result in these cases, may be due to an unrecognized special influence of the disease *per se* (toxin); but many of the symptoms may be traced directly to the diminished biliary secretion which results from the disease. The chyme is improperly affected by the unnatural digestive fluid of the duodenum; fermentations and putrefactions occur, gaseous distension results, colic and other distress may be experienced, and even nausea and vomiting may supervene. The more severe the case, the more distressing the symptoms. Nutrition may be seriously disturbed and emaciation rapid.

(5) Neuroses of the liver, or disturbances of the hepatic function, cannot be as readily defined as neuroses of the stomach and some other organs.

In children, however, there are temporary derangements of biliary secretion, which can be accounted for by some nervous strain under which the child is laboring. The liver, as well as the kidney, secretes more abundantly or less abundantly, differing in different individuals when the patient has been subjected to fright or excitement. Any influence which affects the vaso-motor system may, in like manner, affect the biliary secretion, and the condition of this system is of greatest importance in functional liver derangements. Other things being equal, the liver secretes more freely when the blood flows through it freely and rapidly. It is not strange, then, that under circumstances such as indicated here, greater disturbances of digestion are met with than would likely occur from the change in the gastric walls at such times. These vaso-motor changes are of frequent occurrence in children. The deficiency of bile in this case works the same kind of disorder as prevails in other forms of deficiency of biliary secretion. The effect of diet in these conditions is not measured simply by the action of the bile on chyme in the intestine; the influence extends to the metabolic transformations which take place in the liver itself. The action of the liver in relation to proteids and carbo-hydrates in such cases is scarcely second to the action of the bile on fats, and the skill of the physician is often taxed to arrange a proper dietary for these little patients.

100 *State Street.*

INFLUENCE OF A LIBERAL EDUCATION WITH REFERENCE TO MEDICAL ETHICS.*

By ELMER LEE, A. M., M. D., Ph. B., New York.

Since the first days of medicine, when the responsibility of the body as well as the soul was entrusted to the priest, what is known as civilization and progress, has worked a mighty change in the habits and methods of mankind with reference to the practice of preventing and curing disease. During the first days of history, authority was limited to a few, of which the priest was the principal representative, and to him, therefore, naturally fell the care for his people in both secular as well as sacred things. Reference to priestly methods of treating disease at these early times, reveals the interesting facts that the worshippers who were ill placed all confidence in the ability of their father-confessor to cure the body as well as to save the soul from perdition, while the priest himself, by reason of his ignorance, put his trust in nature's remedial ways. Through fasting and waiting, and use of harmless potions or witchery of some kind or other, devised to appease the unreasoning curiosity of the suppliant, relief when it appeared at the hand of nature, came to be associated with the material thing that happened to fall from the cunning of priest or soothsayer in his mild imposition upon the trusting and superstitious patients What other reason could have influenced Moses in his masterful play upon the imagination of the children of Israel at the time of his great responsibility, for control of both body and mind was required to accomplish their deliverance. In the early days of the medical art there was little need to consider the influence of liberal educa-

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tion and ethics, because the priest was repository of all education, and ethics in medicine was not needed. The head of the church was master of the people, and, assuming the whole control, there was no one with whom to dispute as to potentials; or differences likely to arise concerning the best treatment of appendicitis; or complications that required ethical considerations when his fee was rated at $5,000 for services of intubation or appendicitis; while operations of snipping the offending muscle in heterophoria for the cure of locomotor-ataxia, was passed by without comment or jealousy toward the originator of this highly important discovery.

But to-day it is different, the priest no longer holds himself in authority as to the treatment of the bodily ills of his congregation, for this duty of his sacred office has descended to the physicians, who constitute a separate guild of ever increasing proportions. The wealth of diffused knowledge has become co-extensive with civilization, and is equally the property of all classes, professional and lay. More is demanded of physicians than formerly, for with the increase of perception among the ranks of all classes of men, there is a wider range of discrimination and keener judgment, as well as less patience with imposition. But with the advancement of universal learning, commercialism has invaded the once sacred threshold of medicine in its highest places, and with such unremitting activity as to threaten forever the hope of a return to simplicity in the management of the sick. The mighty power of the printing press swings in the unjust as well as in the just cause, the cold types proclaim both truth and error on the same day and side by side. To the physician, ever hopeful that he may attain to the mount on which it will be able to see nature in her verity as relating to man and the vital processes by which his life is extended from day to day for good or evil, for the most part is doomed to disappointment. The confusion in medicine, which is spread by the publication of error, is a match for the advantages which would be supposed to naturally follow from the universal press. The wonderful growth of libraries with their intricate treatises on every subject, hourly increases the difficulty of distinguishing fact from error in medicine, and augments the premium for clearness of mental vision in order that that which seems to be may not be mistaken for that which is. There are many splendid examples in medicine of untutored men who have conferred honor upon the profession, and who have met the exigencies of disease and triumphed over sickness and death to the advantage of a human soul whose life hung in the balance. Though it would stand to reason that with the faculties thoroughly trained these same men might have obtained far greater laurels, added to the satisfaction which is felt when one comprehends the truth of things. From the very excess of riches in experience, and the multiplication of books filled with what almost seems to be every conceivable view of medicine, and from every standpoint, a liberal education of the faculties is forced upon us as a necessity, if any small part of this mighty mass of literature is to be available for use. The tendency of the era in which our lives are cast is toward higher and continual investigation, and so methodical that it is scarcely possible to miss the smallest and least important phase of any subject. There is well nigh no beginning and no end to opportunities for research. Each generation piles up a very avalanche of printed mind-action to swell the libraries beyond the hope of any man's ambition to master their contents. Were Macauly with us to-day, even his voracious appetite for books would pale at sight of the task.

But to what use are such collections of universal knowledge if there is no mind to grasp their meaning, so that it appears that the greater the list of things written about, the larger the need for a trained intellect to comprehend what is written. The activity of the human mind and the hand of man is never at rest, for somewhere in the world the thinker and investigator is working, while the result of the intricacies wrought by these deep-thinking and patient toilers is to constitute the knowledge which must be mastered by the student of some future generation ere he can attain to the distinction of a liberal education. That very much, indeed, of what is placed before the student by the educator has no practical application cannot be doubted. So that to know a few valuable truths, which are applicable to the complex life of the profession of medicine of to-day, requires many years devoted to hard study, not infrequently resulting in the death therefrom of a promising member of society. But the inexorable demand to know what is to be known increases with each new age, and the more there is to be learned, by so much more is the imperative command to equip with preparation for the human struggle of the survival of the fittest. The strife among the human family for preëminence in arts and science is noble but costly as to lives worn out in the race for position. Competition is unrelenting and never ceases, and reputation for excel-

lence in medicine is able to withstand the siege of the newer and younger men but for a short space of time. The man of experience and real ability soon grows "too old and foggy" in the estimation of the possessors of last year's untarnished diplomas. Some of these young men are more considerate of both their seniors and their contemporaries if they happen to be, in fact, liberally educated and conscious that in this day information is within the reach of all who desire it. It did not appear to me as student, that Latin syntax and Calculus were needed to prepare the mind for a comprehension of physiology and therapeutics, and it was a sore trial to face the professor with a task that seemed beyond my power to master, but the value of that training is plain to see at this time.

Medical welfare or ethics of the closing days of the nineteenth century requires the best and broadest liberal education possible, to detect the dissemination of error spread widecast by the spurious medical literature produced by the greed of commercialism in medicine. Thousands of tons of false estimates by medical men and laymen, advocating the supposed merits of more than 25,000 remedies falsely used in the hope of curing disease, are flowing through the mails and into the offices of the profession of medicine, to the disparagement of the best welfare of the physicians and their patients. In some instances the people look upon the physician as but little different from the druggist in whose store the doctor is accustomed to pass much of his leisure. The public is very much of the opinion that the cures for disease reside in the drugs of the apothecary, and there are many physicians who still hold to the same notion, notwithstanding ever recurring failures of their cases to recover from sickness under the popular plan of treatment in vogue. To create right thinking and to develop the powers of discrimination and remove the misapprehension and misinformation of the profession, is what is hoped for through the work of the Academy of Medicine. For so long as empiricism in the treatment of disease lasts, even though it is not called by that name, it is impossible to see how the profession can ever become a unit and act in accord.

The main thing for which an education is sought is that the powers of perception and reason may be developed to that degree which will assure accuracy. The difference in the mental perception by individuals and its influence in shaping a course of action with reference to curing disease, is a condition opposed to medical unification. But were all who enter upon the study of medicine rightly and thoroughly prepared by systematic college training, as recommended by the Academy of Medicine, the disagreements between physicians could be reduced to a small part of what they are at present. It is but a different view of the same subject that permits the existence of opposing schools and sects in medicine, and this largely is a result of variations in the preliminary training before the work of the medical school is begun. At this time, there is a division of the members of our profession with reference to a code of ethics, the real basis of which is as to whether it is right to consult with men who hold to the doctrine of administering placebos, otherwise known as homeopaths. It matters not what creed is formerly adopted, the fact is that their practice is principally a system of giving inert remedies and trusting to nature to cure the patient. The code forbids consultation with those who practice homeopathy and discountenances those who are not formally within the regular school; we admit that these men who hold this peculiar theory are entitled to the privilege of their convictions, and that they are equally conscientious in their beliefs and practices as are those who differ from them. Contention and argument has been found to be useless in dispersing their convictions, and coercion is neither desirable or in our power; but what would be the influence if universal liberal education preceded medical study? At no distant day this is believed to be possible, and it is the hope of those whose hearts are deepest in interest for the welfare of the physician, that liberal education will settle many of the unhappy disagreements that are found among the various sects in medicine. Liberal education for all is the hope of the twentieth century profession. Even with broad learning it will always be possible for the industrious to excel his slothful cotemporary, but admission that his less fortunate brother possesses the culture and dignity conferred by an education in letters, would at least entitle his views to respect.

It may be too sanguine to hope for unity in thought and action for the medical profession, however near may be the approach to universal education. With growth of the tree comes new twigs and buds ever further and further removed from the parent trunk, the source of the whole strength. The division of the human body into regional anatomy and the prevailing drift of medical students to select a twig or branch of the divine unity, has furnished modern society with a medical specialist for

each anatomical division and for nearly every symptom of disease. This scattering of responsibility has increased the number of diseases and added to their fatality. For there are physicians who, without the experience or comprehension of intricate processes of nutrition and assimilation, through which alone the health can be maintained, assume responsibilities for which their training has not prepared them to the disadvantage of the patient and the injury of the profession. Local symptoms which are the mere expression of some fault of organization or failure in assimilation of nutrition, constitute a large part of the cases claimed as the exclusive prerequisites of specialism. There are honorable but mistaken specialists, who through the want of sufficient experience in general practice, have been known to believe and to teach that the health of the body depends upon a slight astigmatism or heterophoria, or a deflected septum, or adenoid in the throat, while others allege that sickness is attendant upon a fringe at the anal opening or to the presence of an untrimmed clitoris or uncircumcized prepuce, and osteopaths who assert that disease is the result of displacement of the bony articulations. These conflicting estimates by reputable men added to deceptions of the host of schemers and quacks, further augmented by the plausible misstatements which daily crowd the public press, conspire to overthrow the dignity and influence of the most ancient and noble of all the professions. This distracting condition is, in a large degree, attributable to deficient requirements for liberal education and the consequent overcrowding of the medical profession with men who find no alternative than to turn sooner or later into the channel of medical commercialism, some of them through dire force of necessity to keep the wolf from the door. The people are bewildered by the resulting confusion and contention among schools and sects in medicine and by the individual pretenders who shout their cures through medical, religious and secular publications.

The present decade has witnessed a practical change for higher liberal and medical education in the standards for license fixed by New York, Pennsylvania, and already many of the States Since the practical enforcement of the standard in New York, a period of about six years, my information is that the Regents have declined to license nearly one thousand applicants whose markings have fallen below the requirement of a percentage of 75 per cent. for each branch of study included in the examination. It is too soon to state what the whole effect for good will be, but already there are encouraging signs that the higher standard for license is the promise of a realization of the ideal in fellowship, the highest usefulness by the profession and the glory of the twentieth century medicine.

10 *W. Forty-ninth Street.*

THE TECHNIQUE OF ABDOMINAL HYSTERECTOMY.*

By J. F. BALDWIN, A. M., M. D., Columbus, O.,

Professor of Operative Gynæcology, Ohio Medical University: Gynæcologist to Protestant Hospital, etc.

After opening the abdomen in the usual way, by as free an incision as necessary, and drawing up the uterine mass, seize the most accessible broad ligament, just outside of the ovary, with a long clamp, the end of the clamp being directed obliquely toward the uterus. (Fig. 1.)

An ordinary hemostatic forceps or short clamp is then attached to the upper border of the ligament next to the uterus, so as to prevent recurrent hæmorrhage through the ovarian artery. With scissors, the broad ligament is severed along the clamp first applied; the other broad ligament is usually treated in the same way. With scissors, a peritoneal flap is then made in front, between the tips of the two clamps, and the bladder separated from the uterus; a similar flap is then made posteriorly, but this is usually shorter. (Fig. 2.)

At this stage, the uterus itself has not been interfered with, and the uterine arteries have not yet been reached. With the fingers, the layers of the broad ligament are separated on each side, between the end of the clamp and the uterus, and the uterine artery seized with a long forceps. With long scissors, curved on the flat (or, better still, with a Kelly's spud), the uterus is detached at or just below the level of the internal os, being so detached as to give an anterior and posterior flap of uterine tissue. (Fig. 3.)

In case there is any difficulty in opening the broad ligament so as to reach the uterine artery before detaching the uterus itself, its seizure may be omitted until the artery spurts, as the uterus is being severed, when it is seized by an assistant with long forceps. It is frequently difficult, or even impossible, to seize both arteries before getting the tumor out of the way.

*Abstract of paper read before the American Medical Association, June 3, 1897.

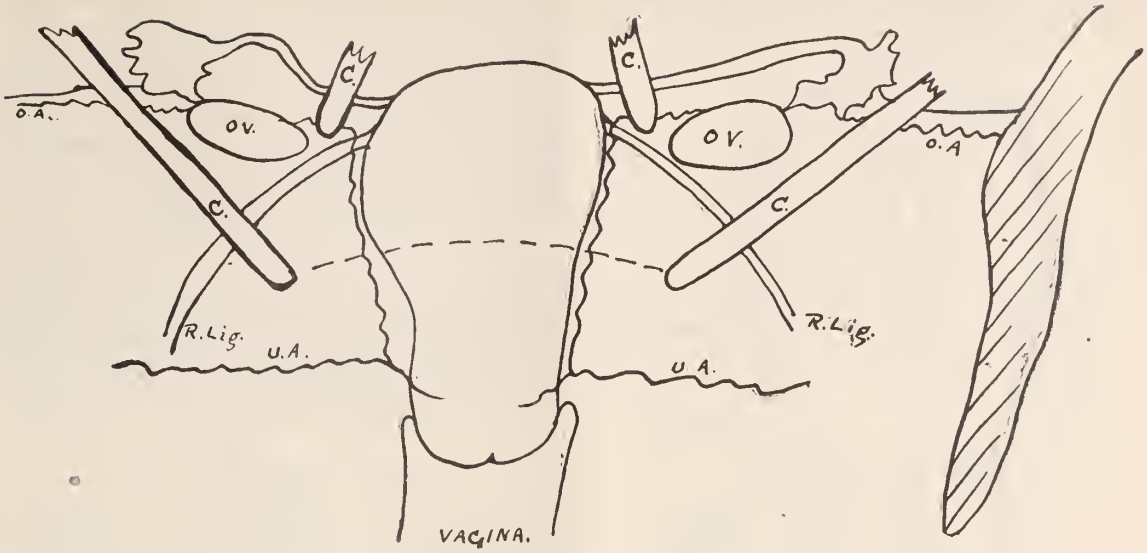


Fig. 1.—Diagram of Operation—Front View.
C. C. C. C., Clamps; O. A., Ovarian Artery: Ov., Ovary; U. A., Uterine Artery. Broken line represents peritoneal flap.

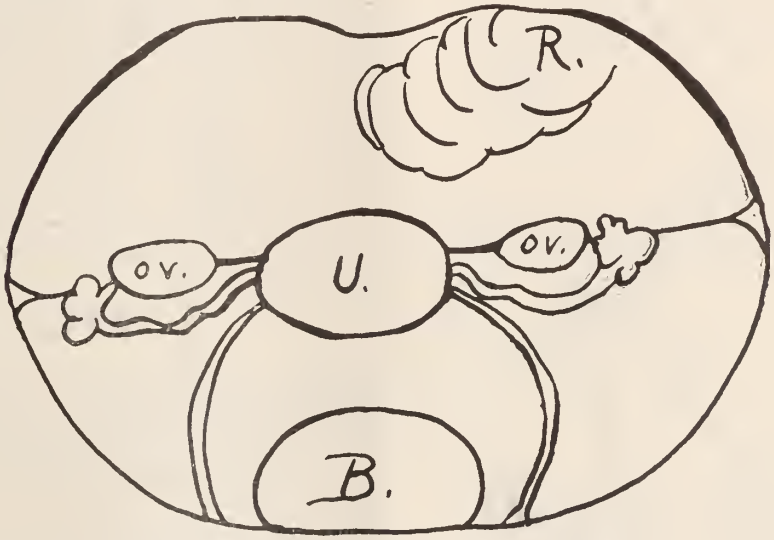


Fig. 2.—Diagram of Pelvis Seen From Above.
B., Bladder. Ov., Ovary. R., Rectum. U., Uterus.

In such a case, I cut across from one side, and as I draw the mass upward, after separating the uterine tissue, the base of the broad ligament is grasped *en masse* below the point of separation, and the tumor then enucleated from below up, without hæmorrhage. This is the method recommended by Kelly, and one which, in many cases, possesses points of advantage. (Fig. 4.)

The uterine mass has now been removed, and the pelvis is empty. Hæmorrhage is entirely controlled, except perhaps a little oozing from the cervical tissues. The uterine artery upon each side is next separated from any surrounding tissue which may have been seized in the grasp of the forceps, and ligated as far back as possible, with rather fine silk, cat-gut, or kangaroo tendon, and the projecting end snipped off. The round ligament is then seized with a forceps next to the clamp, so as to prevent its retracting, and the clamp removed from the broad ligament. The ovarian artery is at once caught with forceps and drawn out from between the folds of the broad ligament, ligated with fine silk or cat-gut, and the projecting end cut off. The same is then done

upon the opposite side. A long silver probe is now threaded with a strip of iodoform gauze,

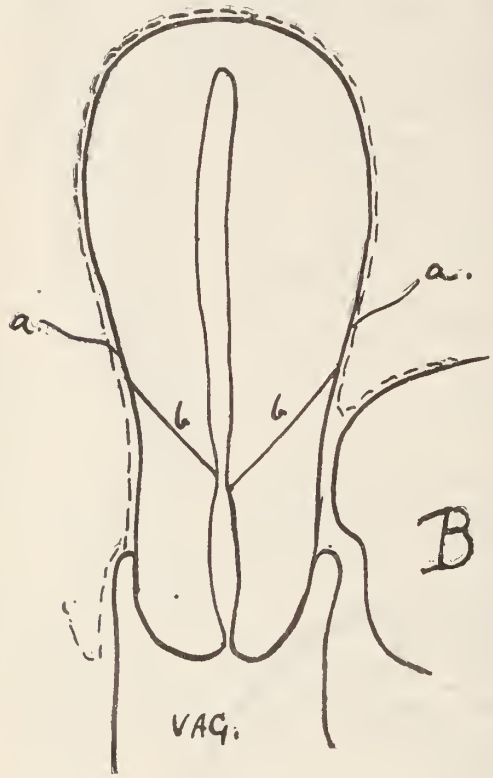


Fig. 3.

a. a., Points of making peritoneal flaps; b. b., Lines of amputation of cervix. Dotted line represents peritoneum.

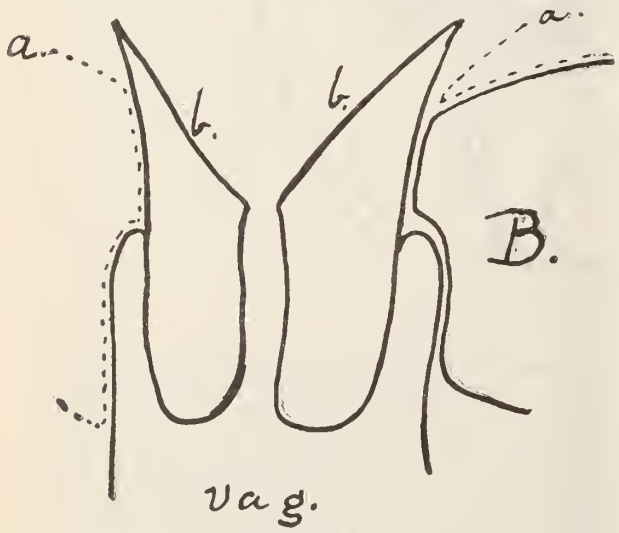


Fig. 4.

a. a., Points of making peritoneal flaps; b. b., Lines of amputation of cervix. Dotted line represents peritoneum.

about one inch wide, passed through the cervical canal into the vagina, and seized by an assistant. The gauze is drawn through the cervix, except an inch or two which I hold in my fingers, and the probe detached as it appears at the vulva. The end of the gauze which I have held in my fingers is now cut off just flush with the bottom of the wound. The passage of this gauze not only mechanically cleans the cervical canal, but also secures drainage in case of any oozing.

With kangaroo tendon, or cat-gut, the uterus flaps are now brought into apposition by a running suture. With the first insertion of this suture upon one side, the round ligament of that side is brought down and transfixed, so as to be implanted, when the suture is tied, between the flaps on that side. The same is

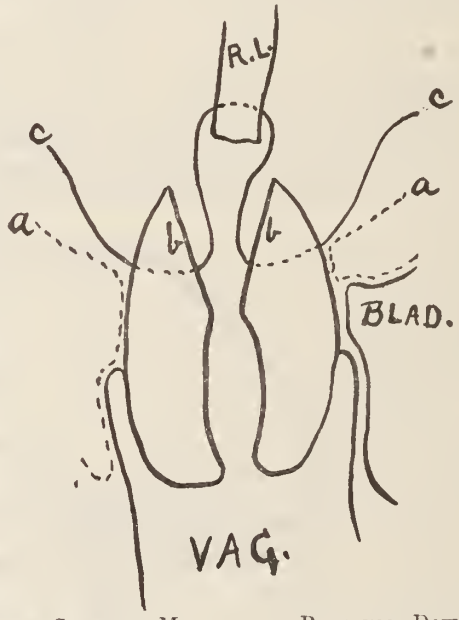


Diagram Showing Method of Bringing Down and Fastening Round Ligaments in Closing Cervical Flaps.

a. a., Peritoneal flaps; b. b., Cervical flaps; c. c., Suture; R. L., end of round ligament.

done with the opposite round ligament just before completing the suture on that side. If the round ligaments are too long, they can be shortened so as to give the desired degree of support to the stump. Commencing, next, at the upper edge of one broad ligament stump, the peritoneal layers are inverted, and, with kangaroo tendon, or cat-gut, a continuous "over-and-over" suture is applied, running down the broad ligament, then across over the cervical stump, turning in the peritoneal flaps as we proceed, and up on the opposite side. This suture should be so inserted as to draw together snugly the tissues of the broad ligament, which, being thus snugly apposed, unite so as to make excellent supports for the stump

in addition to the round ligaments. The operation as thus completed leaves a perfectly smooth pelvic floor, with at no point the exposure of any raw surface for adhesions.

In case, owing to too extensive adhesions or other complications, drainage of the pelvis is desired, this is accomplished by opening Douglas's cul-de-sac, and introducing a gauze drain. The abdomen is then closed in the usual way.

In case it is desirable to remove the entire uterus, the cervix, instead of being cut across, is enucleated in the usual way. In such case, I always introduce a pledget of gauze for drainage at the point of separation of the cervix, but close completely the floor of the pelvis, as above described.

Since devising the above technique I have operated on something over 100 cases, with a mortality of a trifle less than 5 per cent. The average mortality secured by 36 American operators in 1,670 operations, as tabulated by Dr. E. W. Cushing, of Boston, was 13.8 per cent. In only one of my cases was death due to post-operative infection. Post-operative morbidity has been almost nil. Very few patients have remained in the hospital over 21 days after the operation. No cases of ventral hernia nor of vaginal prolapse have occurred. The operation is a short one, usually requiring about forty minutes for its completion, and there is practically almost no hæmorrhage.

The advantages of this method of operating are,

(1) Such a shutting off of the vagina as to reduce to a minimum any danger of infection from that source.

(2) The ligature placed around the uterine artery is entirely outside of the uterine wound, and being of fine material and buried in the tissues is much less likely to give any trouble.

(3) The snug closing of the cervical tissue prevents oozing.

(4) The smooth peritoneum in the floor of the pelvis, having no projecting stumps or raw surfaces, reduces to an absolute minimum the danger of intestinal adhesions.

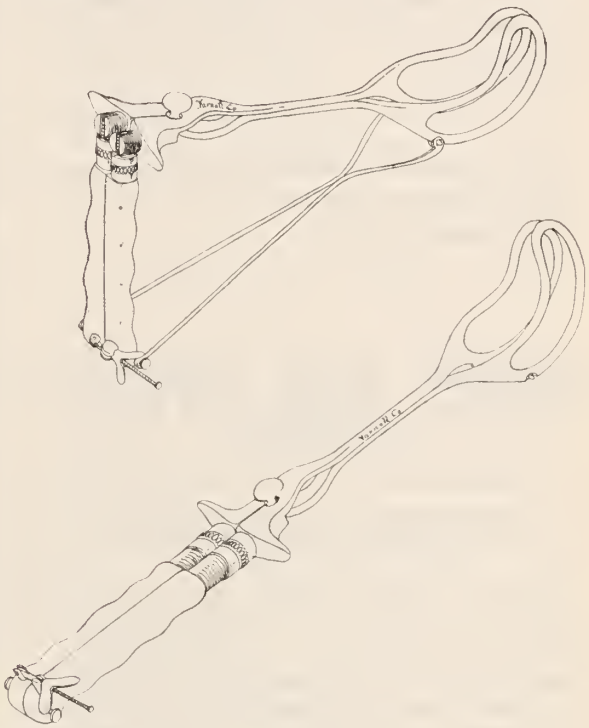
(5) The implantation of the round ligaments and puckering in of the stumps of the broad ligaments prevent prolapse of cervical stump and vagina.

(6) The use of the clamps on the broad ligaments obviates hæmorrhage, leaves the parts in better shape for the subsequent steps of the operation, and saves considerable time.

AN IMPROVED TRACTION ROD FORCEPS.*

By ELMER SOTHORON, M. D., Washington, D. C.

Having had occasion several times to use a pair of traction rod forceps without assistance at hand, and knowing the complications of Tarnier's, and Lusk's modification of Tarnier's—not mentioning the necessity of assistance needed in their application—I had the E. A. Yarnall Co., of Philadelphia, make these forceps from my own model, which are not patented after any particular forceps, but designed from my own ideas gained from experience.



The blades have a large pelvic curve almost at a right angle to the shaft of forceps—and which I believe to be the only practical blade in high operations. Lusk, in his last model, provided for just such a curve in the blades.

The handles are made of light steel, and are about five inches long. They are joined to the shafts of the blades by hinge-joints, allowing them to be turned down at right angles to the same. The traction rods are made of light-rod steel, and attached to the blades at their axis by locks similar to those used on hemostatic forceps, and to the ends of handles by hook-locks. The pressure is regulated and handles

* Read at a meeting of the Medical and Surgical Society of the District of Columbia, May 20th, 1897.

held firmly together by a thumb-screw, placed at the lower end of the handles.

These forceps can be used as ordinary long forceps, simply by the use of two ferrules, which are made to screw up over hinge-joints of the handles, holding them on a line with the shafts of the blades. The forceps are locked with a thumb-screw.

The following advantages are claimed for these forceps:

1. Proper pelvic curve to the blades, which is essential in high operations.

2. Force exerted in proper direction, as you have traction rods firmly locked in the axis of pelvis, thus avoiding the danger of carrying your traction rod force out of the pelvic axis, as you are liable to do with a Tarnier or Lusk's modification.

3. Compactness, lightness, and easy adjustment.

4. No extra handle to manipulate, and easily applied without assistance.

1921 *I Streett, N. W.*

CONCERNING CORNEAL ULCERS, WITH ESPECIAL REFERENCE TO THEIR TREATMENT.

By JOHN DUNN, M. A., M. D., Richmond, Va.,

Professor Diseases of the Ear, Nose and Throat, and Associate Professor Diseases of the Eye, University College of Medicine, Richmond, Va., etc.

Further experience with the use of subconjunctival injections in the treatment of corneal ulcerations and abscesses, seems to show that while this method of treatment is in some cases followed by rapid cures, in other cases—and these to the unaided eye are in every way similar to those in which the cures are obtained—these injections are powerless to arrest the course of the disease. The simplest explanation of this fact seems to be that different microbes have the power of infecting the corneal tissue, and that the growth of some species of these is, by the small amount of the subconjunctival injection added to the corneal lymph flow, arrested; while upon the development of other species it has no effect. If this be true, then it is to bacteriology that we should appeal for guidance, and upon its findings in each case we should rest our line of treatment.

To bring out this the more clearly, several cases will be more or less briefly reported and commented upon. When one is confronted with an ulcer of the cornea, the questions always present themselves: Why is the ulceration confined to the cornea, and why does it not destroy likewise the conjunctiva; why does it not spread beyond the sclero-corneal junction? The answer at once comes: Because of the character of the nutrient fluid circulating through the corneal tissue, the blood being strained, as it were, and the white and red cells removed at the sclero-corneal junction before it is allowed to enter the cornea.

This absence of blood-vessels and the guardian blood-cells, results in the existence of a proper soil for the ready multiplication of certain varieties of micro-organisms, which have destructive effects upon the corneal tissue.

The next questions presenting themselves are: What are the micro-organisms which have the power of thus infecting the cornea, and what are the means at our power for arresting the infectious process, and with least permanent damage to the transparency of the cornea? Solutions, salves, powders, hot and cold applications, the cautery, the curette, subconjunctival injections, paracentesis corneæ, all are followed by excellent results in some cases; in others, they prove one and all powerless to check the spreading of the ulcerative process.

Let us take some examples.

In the *Virginia Medical Semi-Monthly*, November, 1896, the following case was reported:

James P., aged 23. Injury caused by a piece of emery, about midday, September 24, 1896. On the following day, attempt was made by a physician to remove the foreign body, and again on September 26th. After each attempt the eye grew more painful. The next evening the eye was in the following condition: In the cornea, a little below and external to the centre, was a ragged, more or less round, infected ulcer, about 2 mm. in diameter, bathed in a whitish exudate. Extending from the ulcer in all directions could be seen, under a bright illumination, greyish streaks, which, to the naked eye, gave the appearance of a generally clouded cornea. Large hypopyon. Owing to the situation of the infected area, there had occurred as yet no conjunctivitis, although there was considerable irritation. The eye was cocainized and an attempt made to curette the infected area. It was found that the whole thickness of the cornea was infiltrated, and that to remove the whole of the infected area would be to scrape a hole through the cornea. Accordingly, an injection of cyanide of mercury was given. The following morning the greater part of the hypopyon had disappeared,

The almost general cloudiness of the cornea was now limited to a small area in the neighborhood of the ulcer. The discharge from the ulcer had markedly diminished. Twenty-four hours later the activity of the infection had ceased, and the case healed without further trouble, leaving a small nebula to show the former location of the ulcer. In this case, besides the subconjunctival injection, there were used hot applications and atropia—aristol salve.

Such results obtained in so short a time, were in all probability due to the subconjunctival cyanide injection.

It was not until May 25, 1897, that I had a similar case in which to repeat the use of the cyanide. On that date I was consulted by Mr. B., aged 21, who, on May 12th, had gotten into his right eye a piece of emery. This was partially removed. His eye, however, continued to give him trouble until May 23d, when he visited a physician, who removed the remaining piece of the foreign body. Within a few hours the wound had become infected, and the following was the condition of affairs when I saw him on the afternoon of May 25th:

Centrally in the cornea, I. D., was a ragged, dirty ulcer, 2 mm. in diameter. Cornea was so cloudy that inspection could not decide whether or not there existed also an iritis. Upper lid was swollen. There was also a general reddening of the conjunctiva. The ulcer extended through the entire thickness of the cornea. A small collection of pus was to be seen in the lower part of the anterior chamber. The conjunctival sac was washed out with a bichloride solution; 10 minims of a 1–3000 solution of the cyanide of mercury was injected subconjunctivally—half above and half below the cornea. Eserine, aristol and boric acid salve and hot applications were ordered. The following morning the hypopyon had disappeared; there existed no longer any discharge from the surface of the ulcer; the corneal tissue was beginning to lose its cloudy appearance. By the 29th of May, all evidences of the existence of an infectious process were gone. The cornea showed, however, a round, shallow excavation, which gradually filled in.

Thus, for a second time, did the cyanide of mercury injections stop the infectious process and save an eye where hypopyon keratitis existed.

It is to be noted that both of the above cases occurred in young, healthy individuals. It is to be further noted that in one case atropia, in the other eserine was used. The results were the same.

On the 20th of June, Mr. A., aged 60, while out walking with a friend, was struck in the eye by a shoot of a blackberry bush, a thorn from which entered the cornea near its centre and was broken off in its substance, the broad end of the thorn being down below the surface of the cornea. On the following day, Mr. A. came for treatment. The thorn, which was long enough to reach to the iris, into which its point struck, was extracted without difficulty. Hypopyon keratitis had already set in. There was a small focus of pus on the iris around the place into which the thorn had entered, and another larger one at the bottom of the anterior chamber. About the hole made by the thorn, the cornea was infected throughout its whole thickness. A full injection of the cyanide solution was given and hot water and eserine-aristol salve ordered. Mr. A. proved an excellent patient, having his eye attended to with unusual care. In this case *the subconjunctival injection had not the slightest visible effect on the progress of the infection.* The ulceration gradually and steadily increased, the multiplication of the infectious agent taking place in the corneal substance, until practically the whole of the corneal tissue, even to the sclero-corneal junction, was destroyed. The process was a slow one, occupying two weeks. Nor did any treatment, paracentesis included, have the slightest effect upon the progress of the disease. The subconjunctival injection had, however, the effect of lessening to no small degree the pain which is usually attendant upon hypopyon keratitis, and also kept down to the smallest amount the conjunctival secretions.

In considering this case, two things came to our mind—the age of the patient and the probability, nay, almost the certainty, that the destructive agent was different in the last case from that of the first two. That the cornea is less resistent to ulcerative processes in the middle-aged and old than in the young, is a matter of every-day observation; nor are the reasons why this should be so difficult to imagine. It is not unlikely that in the last case our micro-organism was one belonging to the vegetable kingdom—in all probability, the aspergillus glaucus. My reason for making this assertion is that shortly after this case came under my care, I had sent me from the country several blackberry thorns, which were placed on the surface of some flour paste which had been made up for more than forty-eight hours previously, and which, up to the time the thorns were obtained, had shown no signs of mould. Within twelve hours after the

thorns were dropped upon the surface of the paste, there appeared about them a yellowish fibre, which rapidly spread, and which, examined two days later by the microscope, proved to consist of the spores and mycelium. For some reason the fruit heads did not form, and I was unable to decide the character of the fungi.

Leber (Die Entshebung der Entzündung, Leipzig, 1891) gives many interesting pages on his observations in ocular inflammations resulting from infection due to the presence of several microbic fungi.

He demonstrated that if the spores of the aspergillus fumigatus be injected into the corneal tissue, mycotic keratitis hypopyon would be caused, and that from the spores the mycelium would develop in the substance of the cornea. The spores of the penicillium glaucum and of the aspergillus niger injected between the corneal layers, produced no keratitis; and the explanation of this, Leber thinks, is to be found in the temperature of the cornea being too high to allow of the development of the mycelium from the spores. Injections of the leptothrix buccalis produced keratitis with pus in the anterior chamber; as did like injections of cultivations of the staphylococcus aureus et albus. The observations made by Gasporinni, Uhthoff, and Axenfeld, tend to prove that many cases of hypopyon keratitis and of "serpent ulcer," are due to the presence of the pneumococcus. So far as I am aware, no experiments have been made to determine whether subconjunctival injections of cyanide or bichloride of mercury have any effect in checking the development of the mycelium in corneal tissue inoculated with the spores of those varieties of the aspergillus which are capable of inducing keratitis. Reasoning from what we know of the resisting powers of these spores, it seems little likely that their development in the cornea would in any way be influenced by injections of a strength safe to be used subconjunctivally.

Superficial ulcerations of the cornea, to the eye the same in character, often under the same treatment, give most dissimilar results.

Mrs. P., aged 50, has atrophic rhinitis. Suddenly, without apparent cause, her right eye becomes painful, and it is impossible for her to stand any light Examination of the cornea reveals a superficial ulceration occupying the central third of the cornea. Eserine salve and hot applications to the eye; iodoform and boric acid powder blown into the nose is the treatment, and the ulceration has entirely disappeared within four days after treatment is begun.

On the other hand, Mrs. L., aged 66, has purulent dacryocystitis, and develops a superficial ulcer of the cornea. Eserine and aristol salve, hot applications fail; subconjunctival injections prove useless; curetting and applications of the actual cautery prove insufficient; keratitis hypopyon results, and process proceeds to the complete destruction of the cornea. *It is to be noted here that keratitis hypopyon developed from a superficial ulceration of the cornea while the subconjunctival tissue contained a cyanide of mercury solution of the same strength, which in the two first mentioned cases was sufficient to put an end to this inflammation, although it had made much headway.*

The discharge from the lachrymal sac in this case ceased forty-eight hours after the canaliculus was split and nitrate of silver injections had been used. In this case, too, it was interesting to note that although the ulceration was superficial at the beginning, it spread deeper and deeper into the corneal substance until its whole thickness became invaded.

Consideration of this last fact brings to mind what has occurred to me more than once—namely, *the inadvisability of the use of the curette or actual cautery in corneal ulcerations, unless the whole surface of the ulcer can be thoroughly curetted or cauterized.* To partially destroy the surface of an ulcer with the curette, or to apply the actual cautery only to the advancing edge of an ulceration, especially where there coexists a chronic conjunctivitis, is frequently bad treatment; for by so doing we open up the lower layers of the cornea to infection. It will thus be seen that the cautery and curette have only limited fields of usefulness in the therapeutics of corneal ulcerations.

In this connection, the case of Mr. T. is interesting. He had suffered for some weeks from an unusually severe syphilitic iritis, during which time specific infiltration about some of the glands of the upper lid took place. The result was an abrasion of the cornea, caused by the rubbing of the roughened under surface of the lid. This abrasion became infected and the resulting ulceration spread rapidly. Local external applications proved powerless. An injection of the cyanide was given, following which the infectious element disappeared, and, although a larger nebula was left to show the former destruction of corneal tissue, the eye was saved with some usual power. Here, then, are three cases of superficial ulcerations of the cornea; one yielded promptly to eserine-aristol salve and hot applications; the third, when aristol atropia salve failed, yielded to an injection of the cyanide; the second yielded to neither the eserine-aristol salve nor to curetting,

nor to the cyanide injections, nor to the actual cautery, nor to iodoform-boric acid powder, nor to anything else that was tried.

There is one variety of corneal ulceration which resists the cyanide injection, salves of any kind I have ever tried, iodoform and boric powder; indeed, every kind of treatment unless daily paracentesis of the cornea be done; but if this be done, almost any of the more commonly used eye-salves are sufficient to bring about quickly a cure. I have reference to that form of ulceration which occurs at the corneal margin, is very deep, extending, in the cases I have seen, through almost all the thickness of the cornea down to the membrane of Descemet; its tendency is to spread very slowly, both laterally and towards the centre; the irritation over the sclera about the ulceration is unusually intense, and the patient suffers much pain. This brings up the question of paracentesis in the treatment of corneal ulcerations, and here again the results are often surprising. As a last resort, paracentesis must be considered in many cases of corneal ulceration of great value. So much so is this the case, that when one has several times seen this little operation turn the scale on the side of a cure almost despaired of, one begins to wonder why it is not more frequently resorted to. Unfortunately, no precise indications for its use have ever been laid down, and it is frequently disappointing and of no avail. Why should it be of use at all? is the question. So long as the little linear opening is patent, the equilibrium established for the corneal circulation is disturbed, and the probabilities are that the amount of lymphatic fluid flowing through the corneal tissue is increased. It may be that it is to this increased flow that paracentesis owes much of its therapeutic value. That it has also its value in lessening the excessive amount of fluid which tends to accumulate in the anterior chamber from the iritic involvement so common in abscess of the cornea, must also be borne in mind.

No reference has been made to phlyctenular ulcers, the treatment of which, save in exceptional cases, is usually eminently satisfactory. The cases reported above have been selected with a view of showing the uncertainty of the results of treatment of corneal ulcerations whose appearances to the naked eye are very similar. The age of the patient, his general health, the condition of the eye and of the tissues adjacent to it, including the nasal mucous membrane, the patient's surroundings and his willingness to assist in the treatment, all have their bearing on the result; there occur, however, too frequently cases where all of these things are in the highest degree favorable, and yet our remedies seem powerless to stop the progress of the ulceration before its ravages have rendered the eye useless for the purposes of clear vision. The results following the application of our remedial agents are not always the same in apparently the same class of cases. Much good work has been done in isolating the pathogenic microbes existing in corneal ulceration. This work, however, is not general enough, nor does its importance seem to have claimed the attention it deserves. The treatment of infectious diseases of the cornea will always remain unsatisfactory, until for each case we have at our disposal the diagnosis of the bacteriologist and the indications for the remedial agent appropriate for the microbes causing the ulceration. It is not sufficient, however, to know that a solution of a certain strength will destroy one patho genic microbe in so many seconds, and another in so many seconds. We must bear in mind that in the problem before us we have not cultures which we can immerse free in a solution; we have growing colonies which have found suitable breeding grounds, and which, to resist their extermination, are going to use every defense afforded them by the living tissues they inhabit. This last factor greatly complicates the problem, viz.: of rapidly destroying the pathogenic microbes with the least possible damage to the corneal tissue. The introduction of the use of subconjunctival injections promised much in the treatment of infected ulcerations of the cornea. There are undoubtedly many cases where these injections are of the utmost advantage, but, as we have shown above, there are also cases where they fail, and they are useless.

314 *East Franklin Street.*

WHAT ARE NEUROSES?

By WILLIAM S. STOAKLEY, M. D., Millboro Springs, Va.

Ordinarily, neuroses are results of functional disturbances; occasionally, of organic inefficiencies; sometimes they are merely constitutional idiosyncrasies.

This would make them oftener than otherwise only symptoms, because the nerves are naturally the "tell tales" to the sensorium of happenings within and without the economy—agreeable or disagreeable.

When we bestow upon man something more than a superficial study, we will perceive that

while his genius is almost innumerable, yet there are no two alike in operative technique of natural gifts any oftener than there are two like conformations of the face.

Again, we will note by close study, that whilst he is cognizant of his high position in the scale of life, he is sometimes ignorant of his just one. Having everything under him as the chief of the animal creation, is the very best presumptive evidence that he himself must be under something. When he loses sight of this dependent position, he gets outside of his necessary natural aseptic status for healthful technique of his materiality; for it requires him to be constantly on the *qui vive* for harmonic touch with his surroundings.

If this position is not observed and sustained, his first intimation comes through the nerves that something is wrong, and if this wrong is not speedily righted, soon becomes a neurosis, on account of chronic anxiety of the nerves to preserve equilibrium.

But here is a case with neither marked organic complaint, nor is there notable functional disturbances, but simply hypersensitiveness of the electric cords (nerves) to such a degree that we call it neurosis.

Well, it is a neurosis, and such is quite fashionable these days because of loss of the harmonic touch mentioned—the result of losing sight of a dependent position through great wealth, and luxurious living.

And, here is a case of no wealth, but the opposite in this regard, and of usual excitability of the nerves. In this case there is much intellectuality and refinement, with plenty of energy, and we trace it back for several generations as an entail from progenitors whose minds were developed at the expense of the body—and we call it idiosyncrasy.

Still another case comes up for treatment: A gentleman who disregarded, in the beginning of his race for money, all nerve warnings, continuing to do so until he is forced to seek advice, because he finds himself with no nerves left now to tell the sensorium when or how to sleep; the consequence is, he knows no rest. He has strained his nerves until they have no elasticity.

He has traded off his natural aseptic condition for the antiseptic money, and been cheated into the idea of material independence through it—finding himself "sucked" through a very temporary satisfactory tube; having perverted his natural operative technique in acquiring his wealth, he is now willing to swap it all back for health.

The most interesting cases, and those requiring some psychic penetration, are the so-called hysterias. In some of these cases, the nerves tell us secrets it would never do to divulge. They tell us that "it is no use with your blisters, your bitters or your sweets; there is want of cerebral development which man cannot cure;" and they hint so strongly organic inefficiency, that we conclude while we may mend, we certainly cannot make anew.

There are some superlative erethisms where it is not easy to look back of while taking pathological notes. In eclamptic attacks do we not sometimes put too much stress upon the outcry of the nerves? To be sure we know that their "mouths must be shut," still their "howl" is somewhat calculated to lead us too far off the track. To "shut them up" too close, we must not forget is to lose our "reporters." Nevertheless, while we console them with chloral and chloroform, we will not forget that there is something "to pay" behind them, and in plethoric cases, we can sometimes astound these "wild nerves" with relief through venesection—repeated when necessary.

After all, we must admit that there is something about natural mechanism that art cannot overreach, and with all of our antiseptics, there is nothing like the natural plasma when we can preserve it in and about the vagina and the womb after delivery.

When forced to enter the vagina and womb to clear and clean, are there not attributes about the human hand unsurpassed by any artful contrivance?

The category of neuroses would take in almost every complaint by reason of the "prattling" nerves, were we not to look behind them for the causes of their "growlings;" and when the question, "What are neuroses?" comes up, we feel like answering: The results of everything that goes wrong, because we have lost our art of preserving equanimity through abnormal desire for speed.

Beri-Beri

Has recently obtained admission to the port of Cork, having been imported by the *Hassell* from the west coast of Africa. Precautions are being taken to prevent the epidemic from spreading to other parts of Ireland.—*Med. Press and Circ.*, July 28.

Imperial Granum

Is gaining popularity as a food for infants, convalescents, and the aged—possessing as it does the constituents essential for the best food.

Correspondence.

Transposition of All the Organs of the Body.

Mr. Editor:—The following case is so unusual, that I am sure its report will interest the profession:

On July 9, 1897, assisted by Dr. Kirkland Ruffin, of this city, I held an autopsy upon the remains of Miss S. T., which showed all the organs of her body transposed. The heart was on the right side, liver on the left, stomach and spleen on the right, ascending colon and vermiform appendix on the left, etc.

The cause of death was cirrhosis of the liver and kidneys. The liver was thickened, but contracted from before backward; the spleen enlarged, extending from beneath the ribs well down into the pelvis on the right side, and weighing about four and a half pounds. The enlarged spleen, situated as it was on the right side, felt very much like an enlarged liver. Up to three years of her death, Miss S. T. enjoyed remarkable health, so much so, that she used to boast that she had never spent ten dollars for medicine. At the time of her death she was over sixty years of age.

Respectfully,

Geo. H. Rose, M. D.

Norfolk, Va., August 1st, 1897.

Analyses, Selections, etc.

Examination of Different Methods of Surgical Treatment of Retention of the Urine, Due to Hypertrophy of the Prostate.

In a *Second Article* by Dr. Alexander Settier, of Paris, contributed to *El Siglo Medico*, of Madrid, continues his review of Supra-Pubic Cystotomy for Enlarged Prostate. We are again indebted to Dr. George Foy, of Dublin, for its translation.

Dr. Puliot, in his thesis, published in 1868, examined critically the operation of Mery, which, in the beginning of the 18th century, he performed to relieve retention of urine from hypertrophy of the prostate. It consists in supra-pubic puncture of the bladder, with permanent fixation of the canula in place, by which the surgeon proposed to replace the urethra and give passage to the urine.

Mery's operation fell quickly into discredit; this is due to his followers, Gerdi, Malgaigne, and others, of our century.

In Sedillot's treatise on *Operative Medicine*, published in 1866, we come on the first description of a case of cystotomy, so-called, done with the intent to give exit to the urine retained by hypertrophy of the prostate which was obstructing the urethra.

Sir Henry Thompson, in his clinical lectures, speaks of another case, in which he advised, "to save a prostatic patient, that the urine be permanently directed by a supra-pubic channel; according to the great English master, the poor patient was otherwise condemned to death."

Boekel, of Strasburg, in 1884, and Rhomer, of Nancy, in 1888, also practiced opening the bladder by the supra-pubic method to give passage to urine.

But of all these accidents, of three or four cases, in which the treatment was exceptional, there was no surgical principle laid down, and they remain simply isolated acts.

When we reach the year 1889, we find, almost simultaneously two publications very much alike (*muy parecidos*), which treat of the same subject—one in Lyons, produced by Professor Poncet, and the other in Richmond, Virginia, in the United States of America.

In both publications, we find the same method conceived and executed by the American surgeon and by the French professor. Prof. Poncet reports five observations on operative cases from April, 1888, until the time of publication of the monograph, read to the Society of Surgeons of Lyons on the 4th of February, 1890.

In 1893, in the Progress of Surgery of Paris, Poncet presented the majority of his cases, and in the Congress of Savants, meeting in Paris in 1895, he produced a full and learned monograph, in which he throughout clearly demonstrates the steps of the operation and the after results obtained in his first thirty-seven cystotomies.

Both Poncet and McGuire conceived and devised the operation, which has as its object to make a contra-natural, artificial urethra, or through the abdominal parietes, by which they might replace the obstructed natural urethra. Poncet says this, and in the meantime studies the prostate with reference to for prostatotomy or prostatectomy leaving or removing the obstacle which obstructs the urethra.

Poncet and McGuire leave the prostate in place and seek to find another route for the urine, making an artificial urethra through the supra-pubic parietes.

The good results which the new operation has given, which opens for itself a great field

of usefulness, was too much limited by the narrow circles of Lyons and Virginia, respectively, in which it was practiced by Poncet and McGuire and by their pupils, until the Professor of Clinical Surgery of the Faculty of Paris, Dr. Tillaux, performed supra-pubic cystotomy on a patient who was suffering from hypertrophy of the prostate, with retention of urine, uræmic poisoning, and false passages. This new operation he judged to be called for; and soon afterwards Lejaus presented to the Society of Surgery of Paris a paper which dealt with the same operation, in which he noted from the results in those in whom he made the artificial urethra.

In consequence of this paper, the Society commissioned Dr. Taffler to examine into the merits of the new operation, and in October of the same year, 1891, this professor presented his report, in which he gave the indications for the new operation.

Bazy and Routier were also occupied on the same subject, the first with some enthusiasm and in a manner more favorable, until Poncet, who presented in November of the same year a fresh paper, in which he dealt with the after-effects noticed in the first operations done in Lyons, in which he emphasized that in 21 aseptic operations, he had 21 cures.

In 12 others (with acute septicæmia), 4 died in the first week and 8 in the first or second year.

Lastly, in another series of 24 (with septicæmia, chronic), 7 died in the first days, 10 in the first year, and the remaining 7 are well.

The ascertained result of the functional utility of the urethra in 22 patients is, 7 have complete power of retention, 3 have partial, and 12 suffer from incontinence.

The operation performed by Tillaux, and the discussion in the Surgical Society—especially the paper of Poncet—served to popularize this construction of supra-pubic cystotomy to such an extent that, in the last three years, many operations have been performed in Paris, and, of these, the greater number have been done in 1896 and in 1897. I have examined the patients, before operation, and I have personal knowledge of their condition when going to be operated on.

Preparatory.—Before commencing the operation, a complete disinfection should be made of the seat of operation. The hypogastrium is to be soaped, rubbed and shaved. Then it is to be washed with a warm solution of corrosive sublimate, and afterwards washed with alcohol and ether. All the parts around the seat of operation are to be included in the cleansing, etc. "They are to be covered with warm cloths and bathed in a 1 to 1000 solution of sublimate. The anæsthesia is to be produced with chloroform. It is advisable to inject a solution of boric acid into the bladder, and if it is possible (there are few cases where it is), the injection should consist of 200 or 300 grammes of a 4 per cent. solution. This injection should be made during the condition of anæsthesia. After the surgeon and assistants have made their toilet, which ought to be carried on with the utmost care, the hands and the forearms should be washed and scrubbed with tepid water and soap, afterwards with alcohol and ether, and afterwards with permanganate of potassium and bisulphate of sodium. The instruments should be perfectly sterilized; it is advisable to place them in a box of a hot air chamber, and have them heated for twenty minutes in water, to which has been added carbonate of potassium during the boiling of the water.

We give no directions as to the rectal bag, as Poncet does not use it.

The anæsthesia may be produced, as directed, by chloroform or ether. Some operators use cocaine, but this last is not recommended, except in such cases as the patient's condition forbids general anæsthesia. If you have to use cocaine, it is better to follow the method of Reclus, who has at hand a solution of 1 per cent. With this he fills the syringe, whose needle he introduces through the thickness of the skin, making the injection, drop by drop, along the circumference of the seat of operation. He also makes some deep injections to produce anæsthesia of the deeper tissues. It is possible that the injections made, five or six minutes before the operation begins, as Reclus has observed, and, as surgeons have generally noticed may produce complete anæsthesia and protect the patient from suffering.

First step.—Section of the integuments. The incision of the skin follows a line whose points are the umbilicus and the upper border of the pubis. In fat patients, the latter point is sometimes difficult to ascertain. When the skin and cellular tissue has been cut, and when the borders are perfect, Poncet advises the prolongation of the incision upward and downward from the umbilicus to the pubes in the *linea alba.* The incision should measure from 6 to 8 centimeters.

Second part.—Incision of the linea alba. The second part of the operation includes the cutting of the linea alba, steadying it for the cut. This section is to be very small, shorter than

the first, a few millimetres, and lastly, avoid the fold of the peritoneal sac, and the danger of possibly injuring some of the viscera.

Third part.—Seek the bladder and push back the fold of the peritoneal sac. Poncet introduces both index fingers flexed, forming a hook, in the wound; and if the bladder is situated deeply, and if its anterior wall is not in contact with the wall of the abdomen, and if, furthermore, the muscles contract, forming a narrow orifice, and he finds it is difficult to carry in a blunt-pointed bistoury, he cuts each one of the *abdominales recti* at the edge of the pubis or at their point of insertion. The cuts are of small extent, and cause in the end no trouble in the formation of the sphincter of the artificial urethra, which, as we see, is higher up. Generally, 3 or 4 millimetres for each muscle is sufficient to allow of the necessary work, and to expose the bladder.

This is recognized by the view given. Then pass the index finger of the left hand over the top of the pubis and along the whole of the anterior wall of the bladder, and afterwards to the superior border of the bladder to raise the peritoneum, and proceed to

Fourth step.—Opening of the bladder. In those cases in which the wall of the bladder has an evident thickness, and when the viscus is not found distended, you will be able to practice *cystopexia*, which offers the advantage of saving the peri-visceral cellular tissue and the borders of the wound from contact with with the urine.

Generally, in cases of complete retention, *cystopexia* offers inconveniences, caused by the difficulty, almost impossibility, of fixing the wire in a thin wall without perforating it, and passing into the contained urine.

Generally, Poncet opens the bladder and immediately places the wire suture in position.

Having previously recognized the fold of peritoneum and put to one side by the index finger of the left hand, he punctures the wall of the bladder with a bistoury, the part being well exposed.

In the first operations he performed, Poncet incised the fundus of the bladder. In his latter cystotomies, he punctures in the point nearest to the neck of the bladder.

McGuire follows this practice, which he knows offers two advantages:

1. There is less danger of touching the peritoneum.

2. And it ought to be followed with greater facility for the formation of an artificial urethra, a position which, as he says, from the bottom to the top and from the back to the front, should be most serviceable for periodical retention of the urine.

The incision of the bladder ought to be from 10 to 12 millimetres, to allow of the introduction of the index finger after the escape of the urine. With the finger introduced, he examines the interior of the bladder, the form of the obstacle of the prostate, and for the existence of an occasional calculus, which is not infrequently found.

Having emptied the bladder, he proceeds with a large and abundant wash, with a warm solution of boric acid, 4 parts in the 100. In this manner, he cleans out and fills the viscus—thus preventing septic prevesical phlegmons.

After he has washed out the part, he proceeds to dry well the wound and has a tampon applied for some minutes.

Fifth step.—Suture the sides of the opening in the bladder with the sides of the abdominal wound. This step of the operation is most important, and it is here we have to meet three indications:

1. Avoid infiltration of urine.

2. Maintain the passage pervious to the bladder.

3. Line the artificial urethra with mucous membrane, and avoid its cicatricial retraction.

Poncet places six metallic sutures. Each suture should penetrate the bladder from 4 to 5 millimetres from the border of the wound, and immediately it should be passed through the aponeurosis at the inner border of the *recti*, the cellular tissue and the skin, and find exit 5 or 6 millimetres from the borders.

Here in Paris, they generally substitute silk thread for silver wire, which more easily traverses the tissues than metal.

The operation is finished by the insertion or not of one of Perier's tubes; but from the results of practice, I believe them to be most convenient; in this also imitatingPoncet. Do not insert a drainage tube nor a sound of any form, nor anything similar, which is either prejudicial or useless.

Dress the wound with iodoform gauze and cover this with a thick case of absorbent wool. This dressing has to be changed every two or three hours.

Application of Peterson's globe (rectal bag).—This dilator of the rectum, so convenient in certain hypogastric conditions, has been from the first disapproved of by Poncet and by McGuire. In Lyons it is not used, but in Paris some surgeons in the Necker Hospital find it useful.

These last found it of great benefit, just such as they were seeking, as it raises and

exposes the anterior wall of the bladder; accordingly, they naturally employ it, and find that the use of the rectal bag is advantageous, protecting the peritoneum and separating it as much as possible from the supra-pubic tissue, and protecting it by raising the fold out of the way, which agrees with the desire of a dextrous surgeon. I, without doubt, believe that the bag of Peterson is useless when the operator has much familiarity with this class of operations; but I believe it to be useful when the surgeon is wanting in this experience.

Bacillus Icteroide (Sanarelli)

Is the name given the *yellow fever germ* discovered by Dr. Sanarelli last January in South America. It is found in the blood of yellow fever patients, and not in stomach or intestinal contents The microbe itself does not appear to be poisonous, but it secretes a substance which, obeying bacteriological laws, infects the system and causes typical yellow fever. The bacillus has the form of little sticks, round and pointed at the extremities, being united, pair by pair, in cultures and by groups, as found in the human textures. They measure only from two to four-thousandths of a millimetre in length. In all five test experiments on men, made by Dr. Sanarelli, by injecting the antitoxin formed from the bacillus, yellow fever symptoms were produced. He believes that "the microbe, in causing the fever, penetrates the liver when injuries have been inflicted in that region, or enters wounds in other parts of the body; that it is indigenous in hot climates, and thrives in confined and illy ventilated localities"—facts which, he thinks, explain the frightful ravages of the disease on board of ships, and badly ventilated, damp, moist localities.

Antitubercle Serum

Seems to be gaining a solid hold upon professional attention. Dr. Paquin's paper before the American Medical Association is conservative, instructive, and he is now requesting reports from those who have used the serum treatment of tuberculosis in order that the truth, the whole truth, and nothing but the truth, may be arrived at.

Hospital for Contagious Diseases, Asheville, N C.

According to *North Carolina Medical Journal*, August 20th, Mr. Geo. W. Vanderbilt may build a modern hospital, to cost $100,000, for the treatment of contagious diseases in the poor.

Book Notices.

A System of Practical Medicine. By AMERICAN AUTHORS. Edited by ALFRED LEE LOOMIS, M. D., late Professor of Pathology and Practical Medicine in the New York University, and WILLIAM GILMAN THOMPSON, M. D., Professor of Materia Medica, Therapeutics and Clinical Medicine in New York University. *Vol. II.* Imperial 8vo. Pp. 941. Lea Brothers & Co., Publishers, Philadelphia and New York. 1897. For sale by Subscription. Per volume, Cloth, $5; Leather, $6; Half Morocco, $7.

This representative *American System of Medicine*, to be completed in four imperial octavo volumes containing from 900 to 1,000 pages each, fully illustrated in colors and in black, is meeting the claim of the advertisement—that it is a "complete and authoritative statement of the practical part of medicine as it stands to-day." Volume I, on *Infectious Diseases*, issued a few months ago, has already become established authority in medical circles. *Volume II*, now under notice, treats of *Diseases of the Respiratory and Circulatory Systems, and the Mediastinum and of the Blood, Kidneys and Genito-Urinary Organs.* We have here enough of material on constantly occurring diseases to engage every moment of time the active general practitioner can spare to studious reading until Volume III is ready for issue. Dr. Thomas D. Coleman, Professor of Physiology and Pathology, etc., University of Georgia, Augusta, who writes on uræmia and abnormalities of the urine, is the only Southerner of the seventeen authors; but he has done his part well. Dr. A. L. Loomis wrote in his usual clearly descriptive and vigorous style the chapter on endocarditis. The other Editor, Dr. Thompson, however, has not a distinctive article in this volume. But our space does not permit us thus to go into details. We can only remark that some of the chapters of this book are classic, and complete in every part. In fact, having examined the work up to its present stage of issue, we are forced to say that the practitioner who does not avail himself of the opportunity to possess and read this *System*, deprives himself of most valuable help in the diagnosis and treatment of diseases. A syllabus of this *System*, with some rearrangement of chapters and very few additions, would make as perfect a text-book for college classes as any such book could be expected to be. But as it is, it must be a standard for the practitioner who will find in its pages something of value relating to almost any subject that properly belongs to the practice of medicine.

Volume III, soon to be issued, will deal with Diseases of the Digestive System, of the Liver, Spleen, Pancreas and other Glands. Volume IV (which is in active preparation, and which will complete the *System*,) will be taken up with Diseases of the Nervous System and of the Muscles, Diseases of Doubtful Origin—Insolation, Addison's Diseases, etc.

Deutsch's Letters. *A Practical Method for Easy and Thorough Instruction in the German Language.* By SOLOMON DEUTSCH, A. M., Ph. D., Author of *Medical German*, etc. *Second and Revised Edition.* 1896. New York, Chicago, Washington, Paris. Brentano's. Cloth. 8vo. Pp. 480—xxxii. Price, $2.

Deutsch's "*Letters for Self-Instruction in German*" were "prepared with special regard to the close affinity existing between the English and German Languages." The importance of a knowledge of the German language to the medical profession of the United States is so self-evident that we are often surprised to find that some knowledge of it is not required by medical schools. Every year, we find the Trans-Atlantic steamers well filled with doctors from all parts of this country who expect, at least, to visit Germany—many, indeed, proposing for themselves a post-graduate course in some of the Universities of that country; and yet how few of these 1,000 or so of annual visitors go abroad with a knowledge of the German language! Our cities, too, are becoming well filled with Germans. For instance, of the over 100,000 population of this city of Richmond, it is safe to estimate that there are 10,000 German citizens. Many of these do not speak English; so that when requiring professional services, these are compelled to call in one of the few doctors of the city who can speak German, or else have to depend upon an interpreter. What we say of Richmond is common in other cities of America. We refer to these facts to impress the importance of a more common study of the German language by the American doctor. In the vast majority of cases where the doctor does not understand the German language, it is not too late to learn enough of it to satisfy practical demands, which are daily becoming more imperative. Many have not the time to assign definite hours for instruction by a teacher. What they do learn, they must learn at irregular hours—however systematic they may have to progress. Such doctors have now the opportunity of learning to speak the language intelligibly without the aid of an instructor. Such is the special value of the book under notice. No one studying German, who has to rely, either wholly or in part, on self-instruction, can find the equal of this book. It contains many new and well-timed rules which materially help the student "to master, without a teacher, the difficulties of German pronunciation." The author is thorough and explains carefully; and so gradually instructs the pupil that he recognizes for himself that each lesson is easily acquired. Having the endorsement, too, of the leading instructors of German in the Colleges and Universities of this country, we have no hesitation in calling attention to it as the best book published for the purposes indicated. To the German teacher, or to him who has a teacher in German, it is a great help.

We have purposely laid stress upon the value of this book to the medical profession, because there is a need for precisely such instruction as this book well and pleasantly gives.

Reference-Book of Practical Therapeutics *By Various Authors.* Edited by FRANK P. FOSTER, M. D., Editor of *New York Medical Journal*, and of Foster's Encyclopædic Medical Dictionary. *In Two Volumes.* Vol. II. New York: D. Appleton & Co. 1897. Large 8vo. Pp. 618. Cloth.

This second volume completes a magnificent work on *Practical* Therapeutics by eminent American authors—all but one (Dr. Campbell, of Montreal,) hailing from the United States. As Volume I treated of subjects that could be arranged alphabetically between the letters A and M inclusive, so Volume II takes up all subjects that come between N and X-rays. Beside this alphabetical arrangement, there is appended to Volume II a "General Index" of 86 double column pages, which gives all sorts of cross page references, and also a double-column "Index of Diseases and Remedies," covering 69 pages; also 5 double-column pages of "List of Authors Cited." Thus it will be seen that it is not hard to find references to subjects treated of in these volumes, A supplement of 46 pages supplies accidental omissions in the preparation of the work, and brings the books well up to date. To show how thoroughly made up is this *Reference-Book*, we find the virtues of the Buffalo Lithia Water more than mentioned—indeed, some of its more important uses are detailed and authorities named. This work must serve as an almost invaluable one for the practitioner, for each article is a good synopsis of what is known about the subject in hand. In a great many particulars, scattered throughout the work, facts are given which are not given in more systematic treat-

ises on Therapeutics. A glance over the "Index of Diseases and Remedies" will show this. We were specially interested in the *expose* of serum treatment, to which over 25 pages are given; to which pages should be added the sections in Volume I on "Animal Extracts and Juices" and "Antitoxines," covering some 8 or 10 pages more. Indeed, these sections make about the best article of readable length on the action and virtues of serum that we know of. We allude to this simply as an instance of the thoroughness, yet conciseness, of the authors in fulfilling their obligations to the editor. No practitioner will go wrong in securing this Reference-Book; many need it, and some will find it of almost daily use in the discharge of their rounds of duty.

Young People's History of Virginia and Virginians. By DABNEY HERNDON MAURY, Author of "Recollections of a Virginian," etc. Richmond, Va.: B. F. Johnson Publishing Co. 1896. 12mo. Pp. 246. School edition, 75c.; Extra cloth, silver finish, $1; Extra pebble cloth, stamped in gold, $1.50. (For sale by booksellers generally.)

The Publishers' advertisement puts it strongly and correctly in the statement that even Virginians themselves know more of the early history of the Greeks and Romans than they do of that of their own State. This is attributable in great part to the fact that others than Virginians have written Virginia history, and these foreign so-called historians have given the coloring of their peculiar political views to Virginia facts. To acquaint Virginians with Virginia history, as it is to stand before the world, this *Young People's History* is intended for use in schools and in the homes of Virginians. Each fact recorded, it is claimed, has been verified by official papers and dates, thus giving an accurate and reliable statement. With reference to medicines and medical supplies, surgical instruments, etc., we are informed that their introduction into the Confederate States was prohibited under Mr. Lincoln's administration—"a cruel war measure never before enforced by a civilized nation, save by the Duke of Wellington when commanding the British army in Spain."

Guide to Physical Diagnosis. By E. M. MAGRUDER, M. D., Instructor in Physical Diagnosis, University of Virginia. Copyright, 1897. 8vo. Pp. 177.

We have examined this *Guide* with interest and profit. While evidently arranged that the instructor may the more systematically and the better instruct his classes, the summary is so complete and the index so perfect as to make this a most valuable addition to the working library of the practitioner. It is naturally based, for the most part, upon the teachings of the Medical Department of the University of Virginia. Especial credit, however, is given to the works of that great author and teacher, Dr. R. C. M. Page. The first twenty pages scan the "regional anatomy concerned with physical diagnosis;" and then the modes of physical diagnosis are detailed. The system adopted of tracing effect to cause is well carried out in every particular. We sincerely wish all students, as well as practitioners, would study this book so as to understand its lessons; then we would have better diagnosticians and fewer ridiculous statements of insurance company medical examiners, etc. While the student who has progressed far enough to appreciate this work, would naturally correct some of the glaring typographical errors, still it mars the book to find Strümpell spelled Strüm*b*ell, prostate spelled pros*t*rate, jarring spelled *joining*, etc. As this *Guide* is good enough for a permanent issue, we hope the author will meet with such patronage as to encourage him to get out an early, corrected edition.

The Menopause. By ANDREW F. CURRIER, A. B., M. D. New York: D. Appleton & Co. 1897. Cloth. 12mo. Pp. 309.

This book undertakes "a consideration of the phenomena which occur to women at the close of the child-bearing period, with incidental allusions to their relationship to menstruation; also a particular consideration of the premature (especially the artificial) menopause." It combats the "hoary tradition" that the menopause is an experience fraught with peril and difficulty, and holds that it is "not a dangerous time or experience for the majority of women, any more than puberty is." The idea of the author is to advise earlier resort to surgery for the minor troubles, and thus avert the more serious *necessities* for resort to it. A summary may be arrived at by reading the last chapter. "The first requisite during the menopause is watchfulness on the part of both patient and physician." Treat symptoms as they appear. Diet should be simple, the bowels kept freely open, sedatives given as indicated, and the skin kept active. Bleed when the genitals are congested and cause erotism. Carefully watch the hæmorrhages of the menopause which are not physiological. The electro-cautery, curette, tampon, etc., may be of

use; but hysterectomy is indicated if the symptoms are severe or threatening. Of course, astringent drugs are sometimes beneficial to check hæmorrhage. Depletive, hygienic and dietetic measures are generally indicated in the treatment of the neuroses of the menopause.

Editorial.

Medical Society of Virginia.

As the time approaches for the session to convene at Hot Springs, Tuesday, August 31st, the indications are that this will be one of the most interesting and profitable in the history of the Society. Former Fellows are rejoning, and it is probable more new members will be added to the register than at any time for years past. In fact, it has been many years since there was such an awakening of interest in the affairs of the Society.

Much of this interest, no doubt, is due to the fact that in all probability the Prize of $450, offered by Drs. Joseph Price, of Philadelphia, Herbert M. Nash, of Norfolk, and Hunter McGuire, of Richmond—each an Honorary Fellow of the Society—for the best *History of Medicine and Surgery in Virginia*, will be awarded this session. There are five competitors for this prize, and their papers have been in the hands of an able committee for examination since 14th inst. Of course, the Committee has no means of knowing who are the authors of the several papers; and the Secretary can only make acknowledgment of their receipt by noting their signatures as follows: "What is writ is writ; would it were worthier" "Amicus los Tres Amicos;" "Scriba Efferens Nova et Antiqua;" "Quod ero spero;" and "Chirurgicus." The Committee has been requested to value the papers in the order of their relative merit; for the general statement may be made that each one contains some matter of value to the Medical and Surgical History of Virginia that is not brought out in another. These five papers, according to the terms of competition, are to be the property of the Medical Society of Virginia. And it is probable that from these five, an editorial committee of the Society will weave a volume that shall forever stand as authoritative history—a work so long needed, and growing rapidly more difficult to write because of the fragmentary sources of information—some books and manuscripts consulted being even now so old and musty as to crumble when their pages are turned.

The profession of Virginia, as, indeed, of the entire country, will long enjoy in grateful remembrance the benefit conferred by the three distinguished Virginians and Fellows of the Society whose generous offer of this prize of $450 makes it possible for the Medical Society of Virginia to thus enrich the history of medicine and surgery.

Since the issue of the circular announcement, the authors of some of the papers have indicated an intention of changing the titles therein announced. In our last issue, in noting the addition to the announcement of a paper by Dr. Wm. S. Gordon, of Richmond, on *Vomiting of Pregnancy*, we omitted mention of a paper by Dr. Virginius Harrison, of Richmond, on *Infiltration Anæsthesia*.

The Virginia State Board of Health and the Medical Examining Board of Virginia will also hold sessions at Hot Springs, Va., during the same week as that of the meeting of the Society. It is specially important that each party who proposes to come before the Examining Board should be in the Examining Hall *before* 9 A. M., Tuesday, August 31st, 1897.

Which Medical College?

In a few days, those who have determined on the study of medicine must decide upon the college in which they must matriculate. We would not undertake to say that there are not other worthy institutions within the territory of the subscription patronage of this journal; but we do affirm that there are not in America any that are superior to some medical colleges whose advertisements appear in the *Virginia Medical Semi-Monthly*, after the reading pages.

Lest it be overlooked because of the failure to give it a name, in the advertisement, we wish specially to call attention of all interested, that Dr. Francis S. Nash, late of the U. S. Navy, and surgeon in two Arctic expeditions, 1225, Fifteenth street, N. W., Washington, D. C., a most accomplished scholar and genial companion, has opened a *School of Instruction* for doctors who may wish to prepare themselves for examinations for medical positions in the U. S. Army, Navy or Marine Hospital service. Full information as to what may be required will be given by the Doctor in answer to letters addressed to him on the subject. Being in touch with the Department offices in Washington, he is in position also to keep his students advised as to vacancies to be filled, etc. In addition, he keeps himself advised as to the requirements of the several State and important Hospital Boards of Medical Examiners, and gives candidates for such examination thorough reviews

of studies essential to be successful. Having personal knowledge of his ability, opportunities and qualifications, we most cordially commend *Dr. Nash's School of Instruction* to any parties who may be interested.

With reference to the colleges and universities named in our advertising department, we make the following notes to give greater publicity to their special merits. Further information concerning each may be obtained by writing the proper official, whose address is affixed to each advertisement of college.

MEDICAL COLLEGE OF ALABAMA, Mobile.

Founded in 1859 as the Medical Department of the University of Alabama, this relationship is hereafter to be recognized. Its splendid equipments of material and appliances for instruction place the college on a plane with the oldest and best colleges of this country. Its magnificent museum has few equals in this country; some preparations in it cannot now be duplicated, while a few are said to be "worth their weight in gold." The South has a right to be proud of this institution.

COLUMBIAN UNIVERSITY, MEDICAL DEPARTMENT, Washington, D. C.

This university has also a three years graded course dental department. But a *four* years graded course is required for graduation in the medical department. Matriculants must have received a good English education. Unsurpassed clinical facilities are furnished by the Children's Hospital, Garfield, Providence, Emergency and other Hospitals, and by the Central Dispensary. All the laboratories are well equipped. Every opportunity is afforded for the study of the general and special branches of medicine.

NORTH WESTERN UNIVERSITY MEDICAL SCHOOL, Chicago, Ill.

The four years' course of eight months each of this school covers every detail as taught in medical colleges. The division of the clinical class, and the systematic proportioning of cases to the care of students under the direction of the professors gives a superior clinical opportunity for each student. The laboratory equipment in each department of study is complete; and anatomical material for dissection and for operations on the cadaver is abundant.

POST GRADUATE MEDICAL SCHOOL, of Chicago.

This is a school of medicine and surgery for graduates only. Students can matriculate with equal advantage at any time, for instruction is principally by actual clinical work in small classes. The facilities for post-graduate teaching are thorough and complete in all departments, including hospital, clinical, and laboratory advantages, which are unexcelled anywhere.

BALTIMORE MEDICAL COLLEGE, Baltimore.

The course of study at this institution is graded, and covers a period of four years. Each student matriculating in the winter school is allowed the privilege of attending gratis the preliminary fall lectures, which are so arranged as to gradually lead him up to the greater requirements of the winter course. Large sums of money have recently been expended in the construction of new college and hospital buildings, and in procuring modern apparatus for the various laboratories.

UNIVERSITY OF MARYLAND, SCHOOL OF PHYSIC, Baltimore.

This time-honored institution has lost none of its vigor by age. The standing of its graduates before State Boards of Examiners is most flattering, as compared with the results of many other medical colleges. The University Hospital is under the exclusive charge of the Faculty, as is also the well conducted lying-in department. In fact, a special feature of this school is that every student, before graduating, must have personal experience in practical obstetrics.

LONG ISLAND COLLEGE HOSPITAL, Brooklyn, N. Y.

No institution has superior advantages for the study of medicine. It has an able Faculty, several members of which are authors of standard text-books. For the most part, its laboratory equipment and chemical advantages have no superior, and the methods of instruction adopted are excellent—all of which are shown by the positions taken by its graduates throughout the country.

BELLEVUE HOSPITAL MEDICAL COLLEGE, New York City.

The Bellevue Hospital Medical College will begin its thirty-seventh annual course of instruction September 27, 1897. The new college building will be occupied in the course of the session. The first-year class of 1897–8 will enter upon the four-years' course. The other classes will complete their studies under the three-years' system. The corps of teachers has been materially strengthened and the curriculum much improved to meet the requirements of the four-years' course.

NEW YORK UNIVERSITY MEDICAL SCHOOL, New York, N. Y.

It is important to the interests of each of the two great medical colleges of New York to correct the impression that their Faculty have been consolidated, etc. On the other hand,

each of these four years' graded course colleges has many added equipments for laboratory and clinical work. The University Medical School will continue to keep in the lead under its new officers, but pretty much the same experienced professors as last year. It meets every need of the student in the way of laboratory work, clinics, etc.

JEFFERSON MEDICAL COLLEGE, Philadelphia.

This College is as a household name in the affections of many southern homes. It has kept in the front rank with each advance in medical science, and its standards have all been elevated. It possesses all the laboratory and clinical advantages of the best institutions, and has a corps of professors who know how to teach, and take interest in teaching.

THE MEDICO-CHIRURGICAL COLLEGE, Philadelphia, Pa.

This College, the youngest in Philadelphia, the great medical centre of the country, enters upon its seventeenth year with the most flattering prospects. The results of open competitive examinations and of the State medical exinations, have shown, beyond question, that its graduates are able to hold their own with those of the most favorable institutions in the land. The completion of the new clinical amphitheatre, the finest as well the largest in America, greatly adds to the facilities for clinical teaching, upon which, together with laboratory training, the College lays special claim to superiority. Other marked improvements have been made, and, most important of all, the addition to the Faculty staff of several well known and skilled instructors, will be a guarantee that the Institution will maintain its position in the forefront of American medical colleges.

WESTERN PENNSYLVANIA MEDICAL COLLEGE, Pittsburg.

This college has a graded course extending over four years of not less than eight months each. New college and clinic buildings have lately been built, and the laboratories are large and well equipped with modern appliances. Daily clinics are held at the Maternity and Western Pennsylvania Hospitals, and in the Kaufman Clinic building. Attendance upon quizzes is compulsory.

CHATTANOOGA MEDICAL COLLEGE, Chattanooga, Tenn.

This College will open its ninth annual session September 15th, under most favorable auspices. Its past record shows that its aim is at the best, and, by its grit and ability, will surely hit the mark. Its buildings are new, and its equipment abundant and in keeping with advanced demands for the study of medicine. Its requirements are those of the Southern Medical College Association.

UNIVERSITY OF NASHVILLE—MEDICAL DEPARTMENT—Tennessee.

The preliminary course of five weeks, to begin September 1st, well introduces the student to the work that lies before him in the regular course, which will begin October 4th. The Faculty are, for the most part, experienced teachers, and thus have sent out graduates who have stood well the ordeal of medical examining boards, etc.

VANDERBILT UNIVERSITY—MEDICAL DEPARTMENT—Nashville. Tenn.

The course of study is well graded, covering three years. Beside the usual didactic instruction, twelve clinics are held every week. While the regular course opens October 4th, the preliminary course of four weeks begins September 6th, free to students in the winter course. Attendance upon the preliminary course is not compulsory; yet it will be found of greatest value to students who may avail themselves of its tuition.

MEDICAL COLLEGE OF VIRGINIA, Richmond, Va.

The next session of the Medical College of Virginia will begin on September 21st. With the recent additions to its already excellent facilities, this college is now as thoroughly equipped for practical and theoretical teaching as any in the country. Work on the equipment of the Dental and Pharmaceutical Departments (which have recently been established), is well under way, and will be completed by the beginning of the coming session.

UNIVERSITY COLLEGE OF MEDICINE, Richmond, Va.

The extensive improvements now going on at this institution, at a cost of about $30,000, are nearing completion, and everything will be in readiness for the opening of the term on September 30th. Two hundred and seventy students were matriculated last year, and the outlook for the coming session is even brighter. The success of its graduates in all competitive examinations before Medical, Dental and Pharmacal Boards has been especially gratifying, and attests the high standard of its curriculum.

UNIVERSITY OF VIRGINIA, Charlottesville.

The work of each three years of the Department of Medicine continues through the nine months of the academic session, beginning September 15th. Instruction is by systematic lectures and oral examinations, with practical work in anatomy, histology, bacteriology, pathology and obstetrics. Arrangement of stud-

ies is as follows: *First session*—Chemistry (with introduction to principles of physics), biology (comparative anatomy, histology, embryology), anatomy. *Second session*—Physiology, bacteriology, pathology, regional anatomy, materia medica, obstetrics. *Third session*—Gynæcology, surgery, therapeutics, practice of medicine, ophthalmic surgery, hygiene, medical jurisprudence.

Preparations for Medical Examinations.

The instructive communication in our last issue by Dr. Francis S. Nash, of Washington, D. C., based on his experience in two Arctic expeditions while Surgeon in the U. S. Navy, will be read with interest during the present Alaskan "gold-digger's fever." His special opportunities afforded advantages for observation, and give authority to his statements. It is with pleasure we note that this accomplished gentleman and scholar, familiar with the requirements of U. S. Medical Examining Boards, etc., has opened a School of Instruction in Washington city, for the preparation of graduates in Medicine, who propose to apply for Medical positions in the U. S. Army, Navy or Marine Hospital service. His advantages for just such instruction as may be needed by the individual are abundant; his course is complete and thorough; and his charges are as moderate as are consistent with the excellence of the services rendered pupils—whether their special desire is to prepare for State or Hospital, or U. S. Marine, Navy or Army Medical Examining Boards. His opportunities also for pointing to vacancies or medical positions to be filled are complete, and possessed by few in this country.

Dispensary Abuses.

We are not aware that the calamity complained of in some of our larger cities has befallen our city. But it is well to forearm ourselves by the forewarning. In New York, we have heard of much cut-throat competition in order to get patients in hospitals for clinics, etc. And now we read that "nearly 400 physicians of St. Louis are said to be practically starving." Charities are all right; but wherever the suspicion arises that parties able to pay are entering hospitals or dispensaries as free patients, the matter should be investigated; and if the suspicions become confirmed, the parties should be dishonorably discharged and denied privileges of the out-door departments of hospitals or dispensaries. For the present, we are glad to believe that the profession of Richmond needs only the warning in order to prevent abuse developing.

The Governor Sustains the Majesty of the Medical Law in Ohio.

The *Columbus Medical Journal*, August 17, 1897, says: In the cases of W. A. France and W. F. Hale, both of whom made an appeal to the Governor and Attorney-General from the action of the State Board of Registration and Examination in refusing them a certificate, decisions were rendered by the Governor and Attorney-General on August 4, 1897. The action of the Board was sustained by these officials in their decision.

"Dr." W. A. France applied for registration, on the basis of having been a legal practitioner of medicine in the State of Ohio, on the 27th day of February, 1896. Charges were preferred against him alleging that he had been guilty of felony and gross immorality, and that he was not, during the ten years previous to February 27, 1896, a person of good moral character. These charges were heard before the Board, and the application of Dr. France was rejected, and a certificate refused to him on the above-named grounds. The appeal was taken to the Governor and Attorney-General from the action of the Board with the above-mentioned result.

In the case of W. F. Hale, of Jackson, Ohio, upon application for registration as legal practitioner, charges were filed alleging that W. F. Hale was not a person of good moral character during the ten years previous to February 27, 1896, and that he was guilty of gross immorality, in that he abducted the prosecuting witness in a case of abortion pending against him in the Court of Common Pleas of Jackson county. "Dr." Hale was also given a hearing before the Board, and was refused a certificate. He took an appeal to the Governor and Attorney-General, with the result of the Governor sustaining the Board's decision in his case. It is refreshing as well as encouraging to the medical profession to have a Governor as well as an Attorney-General who have the stamina and good judgment to give their support to the advancement of the medical and surgical sciences and to the suppression of any form of quackery.

Instruction in Orificial Surgery.

Prof. E. H. Pratt will hold his eleventh annual class for didactic and clinical instruction in orificial surgery during the week beginning September 6, 1897. The class will assemble in the amphitheatre of the Chicago Homeopathic College, at the corner of Wood and York streets, at 9 A. M. The course of instruction will last during the week, occupying a four hours' daily session.

Mississippi Valley Medical Association.

The Executive Committee met recently at Louisville, in conjunction with the local Committee of Arrangements, the following being present: Drs. Stucky, Grant, Mathews, Love, Holloway and Reynolds. It was determined to make the coming meeting at Louisville, Ky., October 5, 6, 7, 8, 1897, the largest and best in the history of the Association, and everything points to a fulfillment of this endeavor. The railroads will make a round-trip rate of one and a third fare, or probably one fare. The Address on Surgery will be delivered by Dr. J. B. Murphy, Chicago; the Address on Medicine by Dr. John V. Shoemaker, Philadelphia. Title of papers should be sent to Dr. H. W. Loeb, Secretary, St. Louis, Mo.

No Cigarettes for Indiana Minors.

A law has been passed in Indiana which makes it unlawful under heavy penalties for any corporation, company, firm or person to sell, barter, furnish or give, directly or indirectly, to any minor any cigarette, cigarette wrappers, or any substitute for either, or to procure for, or to persuade, advise, counsel or compel any child under said age to smoke any cigarette. And it is made the special duty of prosecuting attorneys to enforce the provisions of this act, and they may summon any minor who may have or have had in his possession any cigarette and compel him to testify before the mayor of a city or a justice of the peace as to where and of whom he obtained such cigarettes.

Bicyle Accidents.

Medical Review, August 21st, says: During July, during about half of which it was raining and consequently few wheels were out, the New York newspapers reported forty-eight more or less serious accidents from bicycling, says the *Medical Record*. Most of the sufferers were those riding the wheel, but there were also many children run down while playing in the street. It is a favorite sport of these innocents to stand directly in the path of a wheelman and make faces at him, so that it is almost impossible at times to avoid an accident.

The Daily Lancet,

Edited by Dr. Joseph F. Edwards, 1625 Pacific Avenue, Atlantic City, N. J., and published by the Bailey and Fairchild Co., New York, N. Y., will be changed to conform more closely to the newspaper idea—of a medical publication. Such a medical newspaper must prove of great interest to the profession.

Supra-Pubic Cystotomy.

The selection in this issue from *El Siglio Medico*, by Dr. Alexander Settler, reminds us to correct a historical record. Some of the foreign writers are in the habit of speaking of the revived operation as the *Poncet-McGuire operation*—dating Poncet's claim as April, 1888, and McGuire's as October, 1888. Many times had Dr. Hunter McGuire done the operation before 1888. During the session of the Medical Society of Virginia in Richmond, in October, 1887, he demonstrated the simplicity of the operation by performing it. So that, if the two names must be associated as authors of the revived operation, it should be known as the *McGuire-Poncet* operation, and *not* as the Poncet-McGuire.

The Georgia Journal of Medicine and Surgery

Is "a 42-page monthly review of science, practice and progress," owned and edited by Drs. St. J. B. Graham, D. E. Dudley, and W. E. Fitch, published in Savannah, Ga. Price $2.00 a year. Its *first* issue, July 15, says it is "*the representative* journal of the South and West." Of course, as such, it deserves success; indeed its merit, outside of its modest claim, entitle it to a wide field of patronage. We place it upon our exchange list and hope it will continue to prove a journal of sterling worth.

Dr. Hunter McGuire

Has been spending most of his summer vacation at Bar Harbor, Maine. Enjoyment of much needed rest has thoroughly recuperated his health. He expects to return to Richmond on or about September 2nd, to resume professional duties. His hospital (St. Luke's Home) will be opened for reception of patients in a day or so after his return. Thorough renovations in his hospital are made each year during his summer vacations.

The following was accidentally omitted from its proper position under *correspondence:*

Parke, Davis & Co. Supply all Potencies.

The ringing report in favor of the serum treatment of laryngeal diphtheria submitted to the American Pædiatric Society, and the stress laid on the early employment of a potent and concentrated antitoxin, impel us to remind the readers of *Virginia Medical Semi-Monthly* that we have long been in position to supply every strength, from 250 to 2,000 units. The

profession seem to lean by preference to doses of 1,000 to 1,500 units, but we can supply promptly all requisitions for a highly concentrated serum in 2,000 units.

Our serum is rigorously tested and possesses, when it leaves our hands, a slight excess of antitoxic power to make good the loss of strength ensuing with age.

We furthermore particularly call your attention to the fact that our containers are *glass bulbs hermetically sealed*—not ordinary vials and corks. Dr. George Duffield, in the *Journal of the American Medical Association*, March 6th, said: "I have found Parke, Davis & Co.'s antidiphtheritic serum most efficacious. Apart from the potency of this brand, I must commend the ingenious manner in which it is marked, viz., in hermetically sealed glass bulbs, which exclude the air and keep the serum strictly aseptic." Dr. B. H. Detwiler, in the *Therapeutic Gazette* for January, stated: "I prefer the anti diphtheritic serum made by Parke, Davis & Co., as it is held in bulb tubes that are smaller in bulk, more convenient for use, more aseptic than the ordinary packages with corks, and the serum itself gives less pain in injecting." Dr. W. A. Walker, in *Pediatrics*, October, 1896, said: "I have used several serums, but have been best satisfied with the effects of that sent out from the Biological Department of Messrs. Parke, Davis & Co. I heartily approve of the way this firm now puts up the serum, in bulbs instead of in bottles." An editorial in the *St. Louis Medical Era*, January issue, affirms: "The antitoxin now offered the profession by Messrs. Parke, Davis & Co. is undoubtedly the safest and most reliable product on the market."

We should be very glad to have you write for our file of antitoxin literature, which includes interesting reports from hospital, municipal and private practice.

Very respectfully,

PARKE, DAVIS & CO.

Health of Denver, Colorado.

The Bureau of Health reports eighty-nine cases of infectious and contagious diseases during July, with thirty-nine deaths therefrom. This is an increase of sixty-two cases and twenty-five deaths, as compared to the month of June. Seventy-six cases were of typhoid fever with seven deaths. The total number of deaths was 166, an increase of forty, as compared with June, 1897, and of twenty compared with July, 1896.

Obituary Record.

Dr. Alexander Nicholas Talley

Died at his home in Columbia, S. C., July 6, 1897. He was born at Washington, Ga., October 27, 1827. After receiving his B. A. degree from South Carolina College, he studied medicine and graduated M. D. from the Charleston Medical College 1851. After a year or so in New York and Paris, he established himself in practice in 1852 in Columbia, S. C. He entered the Confederate Service as Surgeon in 1861, and was one of the authors of the "Confederate States Manual of Surgery," published that year by the Confederate Government. The same year, he was promoted to be Medical Director for South Carolina. In 1862, he was promoted to the Presidency of the Confederate States Army Board of Medical Examiners, which position (in Richmond) he retained till the end of the War. Returning to his home, in 1867 he was made Professor of Practice of Medicine in the University of South Carolina, which chair he filled some years. On the reorganization of the South Carolina Medical Society in 1869, he was elected its first President. He held numerous positions of honor in his local and State medical organizations and in the American Medical Association. At the time of his death, he was President of the Associations of Surviving Surgeons of the Confederacy. Beside having held municipal offices of trust, he was at the time of his death President of the Central Bank of Columbia.

Dr. Cornelius Kellock,

One of the most eminent physicians in the South, and an authority on abdominal surgery, died at his home in Cheraw, S. C., August 17, 1897. He was born in Cheraw in 1845. He received his academic education at Brown University, and graduated in medicine from the University of Pennsylvania just after the war. He then visited Europe, and put himself as a pupil under the renowned Velpeau for a year or so, when he returned to his South Carolina home, where he has ever since remained in a large and influential practice. His death is a calamity which will be felt, for he was an active student and a progressive doctor.

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Original Communications.

MANAGEMENT OF THE THIRD STAGE OF LABOR*.

By ROBERT GLASGOW, M. D., Lexington, Va.

Formerly Member of the Medical Examining Board of Virginia, Etc.

The third stage of labor begins with the birth of the child, and strictly speaking, ends with the delivery of the placenta; but for the purposes of this discussion, we will embrace within the scope of this paper also those conditions which, as it were, grow out of this stage, or follow so close upon it, as to demand the immediate attention of the attendant—*i. e.*, those conditions that come up for our consideration and treatment, from the birth of the child to the period when the mother is ready to be left by the physician, as comfortable as may be, and in the best possible condition for her speedy recovery.

While the time allotted will not permit very extended discussion of these several conditions, and while I have nothing specially now to present for your consideration, still my endeavor shall be to touch at least upon the more salient points of the most important conditions likely to arise, gathered in part from my own experience, and in part compiled from the best sources available, and thus bring the subject before the society for general discussion.

The proper management of this stage of labor is ever a subject of intense interest to the physician, as well as of vital importance to the welfare of the patient. Having passed through the throes of labor, and the agony of fœtal expulsion, the mother, exultant with the joys which seem incident to maternity, congratulates herself that all is well and she is now safe. A different train of thoughts however engages the mind of the accoucheur, for he realises that now begins that stage attendant with most danger to the patient, and that he is now, more than ever, liable to be confronted with conditions, the successful management of which will call forth his best skill and maturest judgment.

In the management of the third stage of labor, the first thing to engage the attention of the attendant is the proper treatment of the funis or cord, and in instances comparatively rare, that condition of the fœtus known as "suspended animation" or "asphyxia neonatorum." The proper time for the application of the ligature to the cord is a matter of no little importance to the infant. The practice on this point is by no means uniform, some practitioners tying the cord almost immediately after the birth of the child, others deferring it for a longer or shorter interval, and still others who simply cut the cord, strip away the gelatinous covering and allow it to desiccate without ligature.

The best practice, I think, is that of late ligation. It has been observed that if the cord is cut immediately, the flow of blood from the placental end is much freer than when it is delayed till respiration is well established. From experiments, which I shall not here detail, by Prof. Tarnier, some twenty years ago, and other subsequent observers, it has been clearly demonstrated that immediate ligation will deprive the child of some three ounces of blood that will enter its circulation if the ligation is deferred; certainly no harm ordinarily comes to either mother or child from the practice of late ligation, per contra; when applied early the child is more apt to be feeble and apathetic. So, unless there is some extraordinary condition to necessitate it, either fœtal or maternal, as, for instance, complete asphyxia of the congestive type on the part of the fœtus, I would urge that the cord should not be tied till respiration is thoroughly established, or better still, till all pulsation in the cord has ceased. As a precaution against infection, the ligature material better be sterilized, and we should see

* Subject for *General Discussion* before the Twenty-Eighth Annual Session of the Medical Society of Virginia, held at Hot Springs, Va., August 31st–September 1 and 2, 1897. Dr. Glasgow was the appointed *Leader in the Discussion.*

that it is applied tightly. Except in twin pregnancies it is probably a matter of no great moment whether one or two ligatures are used, most authors, however, recommend two, one about a half inch from the umbilicus, and a second one a few inches nearer the mother. This second ligature may serve two purposes—first, in cases of twin pregnancy, when a second child in utero is fed from a common placenta, or where there exists a vascular connection between the two placentæ, the omission of this ligature might endanger the life of the second child by hæmorrhage. Again, some authors teach, and I am sure my own observation confirms it, that placental expulsion is facilitated when contraction and retraction of the uterus can take place upon the placenta made firm by being filled with blood. The cord having been severed between the ligatures, the child is given to the nurse. The care it should receive, unless asphyxiated, is, I take it, a matter outside the scope of this paper.

In dealing with the placenta and its delivery, I think we should study nature, and profit by the same; to this end, we should ever bear in mind that after the birth of the child, the uterus usually rests for a time, varying as to duration in different cases. Toning up apparently in order to effect the expulsion of the placenta, in rare cases when the uterus is acting with great energy and vigor, the placenta comes immediately after the birth of the child; this, however, is exceptional. The rule is to expect this period of repose between the end of the second and the beginning of the third stage. This is a time when injudicious and premature efforts to hasten delivery of the placenta may produce untoward results. Playfair says, "There is unquestionably no period of labor when skilled management is more important, and none in which mistakes are more frequently made." The placenta is attached to the uterine wall through the decidua serotina, the uterus at the placental site is thickened by the formation of the serotina, and the mechanism of placental expulsion is accomplished by a splitting as it were of this, one layer of the serotina after placental delivery remaining upon the placenta, the other layer covering the placental site of the uterus. (This was first demonstrated some twenty years ago by C. Ruge, one of Schroeder's pupils in Berlin). The placenta in position hugs closely the uterine wall and its curves correspond to the same. The fœtus having been expelled, the period of rest before alluded to now ensues, and it is during this time that the retro-placental clot is formed.

This consists simply of a bloody effusion, rarely a serous effusion beneath the placenta. And when from time to time the uterus contracts, most of its contents having been expelled, the uterine walls retract more or less at the placental site. We can readily see how, as a result of these several causes, placental separation is accomplished. In some cases immediately after separation, in others after a variable interval, the contractions expel the placenta into the vagina and through the vulva. There is considerable difference of opinion among prominent authors as to how the placenta presents.

There is a long list, among whom are to be found Schultze, of the German; Tarnier, of the French; and Hirst, of the American schools, who claim that the placenta by reason of its own weight sinks to the cervex, pulling the membranes after it. While an equally long list of such men as Mathews, Duncan, Lusk, Grandin and others, claim that the placenta slides along the uterine surface and presents edgewise at the cervix, and thus enters the vagina. This latter school claiming that in those cases where the fœtal surface appears first, there has been unwise interference, usually by traction on the cord, to hasten delivery. My own belief is that both mechanisms are essentially normal, but that the latter is much the more frequent, as well as the more favorable of the two. As in this mechanism the placenta presents in such less bulky form, and is consequently more easily expelled.

Having thus briefly considered the mechanism of placental separation and delivery, we will now turn to its management. After the birth of the child the accoucheur should keep his hand upon the uterus to prevent its becoming unduly relaxed, and when the organ contracts under the hand, he should assist in the expulsion of the placenta, by a method of compression known as the Credé method. There are other procedures recommended, but this is the one most generally adopted. The method essentially consists in making, first gentle then stronger friction to the fundus, until an energetic contraction of the uterus is obtained; when at its height the organ is grasped so that the fundus rests in the palm of the hand, and at the same time pressure is made downward in the axis of the inlet; by this method the placenta may usually be expressed during the fourth or fifth pain, or within ten to fifteen minutes after the birth of the child. (Credé, however, shortly before his death advised waiting a longer time, from twenty-five to thirty minutes). The method of Schroeder has its advocates, this "consists in quietly waiting till the diminution and ascent of the uterine body

above the symphysis indicates that the placenta is expelled from the uterine cavity, then by gentle pressure to expedite its passage through the vulva." Competent observers claim that the natural forces unaided will expel the placenta out of the cavity into the lower uterine segment in from five to fifteen minutes. Then there is what is known as the Dublin method, The Expectant method, etc.

The very prevalent method of delivery by traction on the cord, is only mentioned to condemn, as being unnecessary and dangerous. When we contemplate the mechanism of normal placental separation and expulsion, we must be impressed with the absolute futility of traction *before* separation has occurred. Should the attachment be firm, traction will simply irritate and aggravate the condition, and should it be sufficiently strong to detach in advance of the normal mechanism, the patient is needlessly subjected to the risk of hæmorrhage, the sinuses not having had a proper chance to close, as they usually do in normal cases. *After* separation, traction may prove successful for delivery; but even now it better be avoided, as there is a better way to accomplish the end. Then, again, in a given case we may not know whether the placenta is adherent; and if it is, traction may result in pulling away a portion only, or produce an inversion of the uterus at the point of placental implantation. In fact, if in a reasonable time the placenta is not expelled by the natural forces, assisted by one of the above methods, intelligently applied, the inference is, that we have a case of adherent placenta, or one incarcerated above the ring of the contraction, or what is known as hour-glass contraction. In either of these conditions traction will prove futile, and it will be necessary to resort to manual extraction. Just in proportion as the physician familiarizes himself in a practical way, with one or the other of the above methods of placenta delivery, in the same proportion will be the infrequency that he will find it advisable to resort to the method of traction.

In most cases the membranes follow close upon the placenta, but sometimes the lower segment of the uterus contracts upon the membranes. and a portion is torn off; this is probably more apt to occur when the attendant has been over-zealous in his efforts to complete this stage either by traction or undue massage. This, too, I believe, is more apt to occur when the usual practice is resorted to of twisting the membranes into a cord to facilitate their removal. This procedure is, I know, recommended in most of the books; but for some years past I have abandoned the practice, finding that I can deliver the membranes more satisfactorily without resort to it.

As a precaution against hæmorrhage, after delivery is completed, it is a good rule to keep the uterus in the grasp of the hand for one-half to three fourths of an hour—the womb undergoing, during this time, alternate contraction and relaxation.

As the normal puerperium and good getting up depend so much upon the complete emptying of the uterus, it is wise to examine with the eye the placenta and membranes as to their entirety, and if not satisfied that they have been wholly expelled, it is a very easy and safe procedure, when aseptically done at this stage, to explore the interior of the uterus and remove any fragments that may remain.

At this point it may be proper to consider briefly the use of ergot, for if it has a place, and I think it has, in my judgment, now just after the delivery of the placenta and membranes is the first proper time, since the labor began, for its administration. It is only necessary to well understand the physiological action of the drug to condemn its use any how till the delivery of the child is accomplished. If given earlier, it may induce speedy delivery of the child, at the same time possibly causing laceration of some part of the genital tract. But again, it may fail to hasten expulsion and bring about a condition of tetanic spasm of the entire organ, which would imperil the life of the child, and at the same time very much embarrass any operative procedure, should the nature of the case demand such. Or, following the premature administration of the drug, might ensue a spasmodic condition of the lower uterine segment, thus, as it were, incarcerating the fœtus, which might endanger the life of both mother and child. After delivery is complete, I was taught, and it has been my custom, to give a drachm of the fluid extract of ergot. Some advise giving it as soon as the fœtus is born. This, too, is attended with an element of risk, as there might be delay in the delivery of the after-birth, and the drug producing its effect prematurely might cause hour-glass contraction. The fact that this may prove a rare accident is no argument in its favor. The only case of hour glass contraction I have ever seen was, I feel sure, caused just in this way. The better plan is to wait till the close of the placental stage, when the drug can be productive of no harm; and the weight of experience would seem to prove that if given then, and possibly for the first few days of the puerpe-

rium, it will be productive of good, in proving a safeguard against hæmorrhage, in assisting to maintain due contraction of the organ, and at the same time thus hastening and favoring the process of involution. I once heard the late Dr. Fordyce Barker, then President of the New York Academy of Medicine, and a good authority in his day, in a discussion on this subject, say "that he was a routinist in that he always gave ergot at the close of labor, and that after a long and large experience, he was convinced of its salutary effects."

As to the post-partum douche, I find that authors differ, and I think too, the rank of the profession is probably equally divided, some advocating and others condemning it as a routine measure. After a pretty thorough study of the subject and a fairly large experience in the matter, my own belief is that if the labor has been conducted through to its termination upon aseptic principles, there is no indication for the douche, either vaginal or intrauterine. If, however, strict asepsis has not been practiced—and we should be satisfied with nothing short of it—then it will be the part of wisdom at the close of labor to give one douche of weak creolin, carbolic acid solution, or other antiseptic. So long as the puerperium pursues a normal course, it is, I think, more than probable that routine douching increases rather than diminishes the danger of infection. When, however, the lochia becomes foul, indicating the probable presence of a decomposing clot in either the vagina or the uterus, an antiseptic vaginal douche is indicated, and if it persists after vaginal douching, it may be carried intrauterine—this latter procedure being done by the physician himself. After the delivery is completed, the external genitals should be thoroughly cleansed, using for this a bowl of clean water, to which has been added a few bichloride tablets or other antiseptic, and a sterilized napkin or pad applied to the vulva. As to the *binder*, I myself have never seen any special advantage from its use. I know that most of the text-books advocate it, and I doubt not that many before me will take issue with me on this point and argue that I have probably not acquired the art of properly applying it. The belief which seems to exist to the effect that it restores the form of the woman, is, I think, altogether fallacious. In former years, I faithfully applied the binder, but latterly I have practically abandoned its use, and find that cases get along just as well and just as comfortably without as with it. When applied it should reach to a point below the trochanters, else it will soon slip up and become a mere rope around the body and a source of discomfort.

Having thus far considered entirely *physiological* conditions, we will now turn our attention to some of the *pathological* conditions that are likely to arise during this stage.

First, the condition of the fœtus above alluded to—namely, asphyxia—the term asphyxia neonatorum is, according to Lusk, applied to "all forms of congenital asphyxia in the new-born living child, not incompatible with a continuation of its life." Some of the older authors described two stages of this condition, corresponding to the terms asphyxia, "livida," and "pallida;" later authors, however, recognize these as two independent varieties of asphyxia, depending upon different causes, one the *anæmic* and the other the *congestive* type, and it is important to differentiate between the two before ligating the cord. In the *anæmic* form the child is born limp and relaxed, heart-beats are faint and indistinct, condition much resembling that of acute shock, due to hæmorrhage. The cause of this variety is either some mechanical obstruction to the flow of the blood from the placenta, such as twisting or prolapse of the cord, or an inability on the part of the mother to furnish a proper supply of oxygenated blood. In this form of asphyxia the ligation should be delayed as long as there is any flow of blood to the child, as evidenced by pulsation. Heat should be applied to the surface in the shape of a bath, hot saline solution in the rectum, and a few drops of hot brandy in the mouth will prove helpful.

In the *congestive* form, the child is born with the surface of the body more or less livid, muscles rigid rather than relaxed, while the heart's beat and respiration are labored; the cause of this condition is a protracted second stage, where the uterus has for a long time been in a state of spasm, thus favoring congestion and interfering with proper oxygenation, here the cord should be immediately severed and allowed to bleed, and measures to encourage deep respiration should be resorted to, such as dipping first in hot then in cold water, in the meantime clearing the mucus from the upper air passages. Should the above measures fail, then we must have recourse to one of the well-known methods of artificial respiration. Either of the above conditions may be very alarming, but resuscitative means should be persevered in so long as there is any sign of life, as we are thus often able to save these little ones with very little upon which to base hope.

Another abnormal condition which is liable

to confront us during this state, is *retained placenta.* Cases of *so called* retained placenta are common, and due to various causes, such as pulling on the cord, or by an improper practice of the Credé method, pressing the fundus forward, producing a flexion, instead of pressing downward in the axis of the inlet. Cases of *true retention* are rare, and due usually to pathological adhesions to the uterine wall, or to hour-glass contraction. This latter condition may be due to the injudicious use of ergot, or more probably to the result of abnormal adhesions which interferes with normal contraction and retraction of the womb. The management of these anomalous conditions frequently tax to the utmost the skill and patience of the physician. In the first class of cases, where there are no adhesions, and where there is no contracting ring above which the placenta is incarcerated, there is usually little if any difficulty attending the delivery. In the second class of cases, the difficulty will depend upon the extent and character of the adhesions present; with one hand upon the fundus steadying the organ, the fingers of the examining hand are passed into the uterus, should the examination reveal that there is partial detachment, taking this as a starting point, by means of the fingers, the adhesions are broken up and the placenta thus detached from the uterine wall. If no point of detachment can be found, then the thickened border can be taken as the starting point; should contractions now occur, they will help to bring out more clearly the border line between the uterus and placenta.

The detachment having been completed, the placenta is manually extracted, care being taken, as far as possible, to remove all shreds of membrane and pieces of after-birth. In cases of *hour-glass contractions*, by exercising patience, the stricture will relax; this may possibly be encouraged by the administration of antispasmodics; the delivery may be accomplished by forcible dilation, but this may best be reserved for those cases attended with copious hæmorrhage, which are rare. In most cases with the hand in the vagina, the index and middle fingers at the point of constriction, by pressing the uterus well down, the internal fingers can make out the placental border. Now, if a very small portion can be dragged into the contracted ring, under the constant pressure of the placental mass, the stricture gradually gives away, when the delivery can be terminated by the usual method of expression.

The last, save one, but not least, in interest or importance of these anomalous conditions, to which I will refer, is probably the one that will cause most alarm, and is, *in fact*, one of the most dangerous accidents that we are liable to encounter during parturition. I refer to post-partum hæmorrhage. It is frequently sudden and unexpected, and may in a very short while so exsanguinate the patient as to render her condition most serious and alarming. It is a time of all others that the physician should be calm and collected, for he will probably meet with no obstetrical emergency which allows as little time for reflection or which demands more prompt action.

Post-partum hæmorrhage is due to defective contraction and retraction of the womb, and takes place usually from the placental site, but may occur from some laceration of the genital tract, most frequently of the cervix involving the circular artery. In a given case it is important to decide whether the bleeding is from this source; the uterine ligaments are now relaxed, and the cervix can be pulled down to the vulvar orifice and inspected, using for this purpose the vulsellum forceps if desired. If there is a lesion, the character of it can be ascertained and repaired if deemed wise. If this source of bleeding is excluded, and it is not very copious, we may probably control it by ergot, and introducing the hand into the uterus. This stimulates contraction, and at the same time enables us to remove any bits of placenta, clots, or shreds of membrane that can be detected. Of course during all this time the body of the uterus should be held in the grasp of the other hand. Should this procedure not control the bleeding, the method of bi manual compression may be tried. This consists in "grasping the fundus through the abdominal wall, compressing it firmly and pushing it downward and forward against the pubic bone. At the same time with the index and middle fingers of the other hand in the *cul de sac* posterior to the cervix, presses the cervix forward toward the body of the uterus;" by this procedure the cervix is closed, the uterine walls are brought together, and contraction favored by pressure and kneading of fundus. Should this method fail, pieces of ice should be inserted into the uterine cavity; it is exceptional that the stimulus of cold thus applied does not cause the uterus to contract, and I will say that such is my faith in this remedy, that in all labor cases I anticipate this accident by having ice on hand. Should this fail, however, then we should resort to intra-uterine injections of hot water; this should be done with caution and care.

If at hand, probably the most reliable agent for securing contraction is the Faradic current.

The use of styptics, formerly employed to control post partum hæmorrhage, has to a great extent been abandoned; no doubt by their use the bleeding can frequently be stopped, but the clots which result are liable to decompose, and thus expose the patient to the dangers of sepsis.

Recently a more efficient and safer method has been introduced in the uterine tampon, and should the above-mentioned methods fail, we should resort to this. Sterilized gauze is the proper material for this purpose, torn into strips, two-third inches wide, with the *os patulous*, as it usually is at this time, by pressing the uterus well down, it is not a very difficult task to pack the gauze in with the hand. I have found, however, that usually this can be more readily done with the patient in Sim's position, and with the aid of speculum, vulsellum and dressing forceps. This controls the bleeding by compression at the bleeding point. This pack can be removed in twenty-four hours, and ordinarily a second one will not be necessary, as the uterus will now contract; if it does not, however, it can be repacked.

The patient's general condition in the meantime should receive our earnest attention. As result of loss of blood her life may be imperiled, her condition being such as to demand the free use of stimulants and restoratives to re-establish the circulation. The patient's head should be lowered and the foot of the bed raised. External heat should be applied and opium given. Hypodermics of sulphuric ether, brandy, strychnine and nitro-glycerine, one or all may be given; but probably the best means we have to combat this condition of acute anæmia is injection of hot normal saline solution into the rectum, where it seems to undergo rapid absorption.

It has been my misfortune since the last meeting of this Society to meet with two most alarming cases, but one, of post partum hæmorrhage, that I have seen in my professional life; one a case of placenta prævia—marginalis—where it was decided that version was not practicable, the delivery being terminated by high forceps. The other a case of copious bleeding, incident to the detachment of an adherent placenta. I was impressed that the hot saline solution in the rectum contributed more than any other means towards re-establishing the circulation, and thus possibly saving the lives of these two women.

In closing this paper, I feel that I must briefly refer to the very common and much neglected surgical condition of laceration of the cervix and perineum. While it is true that slight tears frequently occur in normal labor, and as frequently satisfactorily heal during a properly-conducted puerperium, still they may be of such degree as to assume pathological importance, and, as Doctor Emmett says, "Furnish the foundation for a multitude of uterine disorders." The after effects of these tears, if neglected, are liable to be serious, and if they don't prove the means of septic infection are liable in other ways to retard recovery, and sooner or later bring the patient to the gynæcologist for relief. Hence the art of repairing by suture these lacerations should be acquired by all of us who do obstetric work. In all cases at the close of labor we should examine by sight, as well as by touch, to see if any damage has been done. At this day it should hardly seem necessary to urge this examination and the importance of the primary operation, anyhow in perineal tears, but I am convinced that this precaution is still much neglected. I have heard doctors, with an experience running through a number of years, say that they had never met with this accident. In reality, I think that they have failed to thoroughly examine and detect it, as it seems a well-known fact now, from statistics covering a large number of cases, that it is an accident of frequent occurrence, even in the hands of the most skillful. Intelligent patients recognize now, as well as doctors, the importance of this operation, and I feel sure that we will be more apt to keep the good will of our patients, as well as conserve their best physical interests, by detecting and repairing these lesions. It is only of late years that immediate repair of the cervix has been done. When indicated, the operation removes one of the most frequent causes of subinvolution and precludes one of the avenues of sepsis. The operation becomes imperative where there is copious hæmorrhage, which, upon investigation, is found to proceed from a deep tear involving the circular artery.

I will not enter into the technique of these operations, it can be found in detail in any work which treats of the surgery of the puerperium. The only condition that would contraindicate the immediate repair of a serious laceration would be great exhaustion from either hæmorrhage, or severe or protracted labor, or in case it has been necessary to use the gauze pack to control hæmorrhage. Under either of these conditions the operation should be deferred.

DISCUSSION.

Honorary Fellow Dr. E. W. Row, Orange, Va.,

remarked that Dr. Glasgow's paper seemed to have covered so well all the essential points involved that he rose simply to thank him.

Dr. A. Harper Buckmaster, University of Virginia, had listened with interest to the paper, which had gone over the most important facts connected with the third stage of labor. He wished, however, to make *two points:* 1st. With regard to the question of interference, his advice is, do not trouble the uterus as long as everything is proceeding normally. Especially is it sound physiological advice not to pull on the placenta unless it is thoroughly detached. He has known it to remain attached to its uterine bed as long as two days before Nature detached and expelled it. The nerve centres which control the conduct of the uterus during pregnancy and the process of labor responds also to what may be called the "irritation of maturity," for want of a better name, and causes the rhythmical contractions of the uterus in labor which we call *pains* of childbirth. There are always distinct intervals of rest between these pains, which rhythmically recur—beginning as a sensation of contraction, rapidly reaching their acme, marked by almost irresistible "bearing down" sensations on the part of the patient, and then they graduallp pass off. Only when the womb contracts, should assistance be given by slight pressure over the fundus of the uterus—pressing it more or less downward along the line of the curve of Carus. 2nd. As to perineal laceration; it is well to remark that Dr. Emmet devised no special operation for its repair. There is really no physiological importance assignable to the outer tissue of the perineum. Injury, however, to the pelvic floor is a different matter; and when this is lacerated or otherwise injured, it should be repaired as promptly and as effectually as possible.

Dr. Edward McGuire, Richmond, Va., agrees in general with the positions taken by Dr. Glasgow. He, however, allows no placenta to be long retained in his patients. He adopts Credé's method for its expulsion. He would greatly fear the result of delay in removing the after-birth. As to laceration of the cervix, as referred to by the author of the paper, if at all considerable, he would unquestionably advise immediate repair. Many rents of the perineum are overlooked. He is in the habit of opening the vulva, and examining some distance even of the vagina. If any ruptures of importance are detected, he always repairs them at once.

Dr. Wm. S. Gordon, Richmond, Va., spoke of the process of detachment of the placenta, and remarked that it then came down edgewise. He has even known of a case in which arterial hæmorrhage followed normal detachment of the placenta. In this case, he had to insert his hand up to the place where the placenta was attached, and found that the detached placenta edge was curving downward into the cavity of the uterus. It was easy to follow this wave of placental detachment. As to the suggestion of Dr. Buckmaster about waiting for the expulsion of the after-birth, he would be a little afraid of decomposition setting in, although it may be a question as to whether decomposition first sets in in the cord or in the membranes.

Dr. Buckmaster said he was afraid his remarks had been misunderstood. The case to which he referred as having waited two days for detachment of the after-birth was unusual in his own practice. Ordinarily he expresses the placenta by the usual Credé method. He, perhaps, ought to have been more explicit in remarking that he was condemning the too hasty forcible removal of the placenta because of mercenary motives. Too many doctors, in their haste to get to other patients, perhaps, who pay better than the poor sufferer in hand, pull on the cord, or too quickly insert the hand and tear the placenta from its bed, thus causing unnecessary intra-uterine wounds, leaving foci for infection, etc., or do other avoidable mischief; whereas, if they were to wait until nature was ready for the removal, the end would be accomplished without wound or injury. Of course, when the placenta has become detached, remove it, if it does not come away itself. But if it remains attached by any large extent of its inner surface, wait awhile—wait until Credé's method will express it. Of course, if serious hæmorrhage occurs or threatens because of *partial* detachment, that would be a sufficient indication to interfere and remove the mass, while external manipulation aids the contraction of the uterus from the fundus downward toward the cervix.

Dr. Row was surprised by the statements of some of the teachers. He graduated in 1858, and practising mostly in the county in which he resides ever since, has necessarily had a large obstetrical experience. From this experience, he is sure he could not sleep if he left a placenta in the uterus. If it does not come away within an hour at most, he invariably, but gently, removes it, and has never had occasion to regret such interference. Ordinarily he adopts Credé's method; but when that don't work, after well washing his hand, he passes it into the uterus and takes away the after-birth

—whether he finds it partially attached or not. He would impress upon the young men before him, to learn the lesson of his experience. *Don't leave the placenta in the uterus under any circumstances when going away from your patient.* Thus he differs from Dr. Buckmaster. As to the recommendation of Dr. Edward McGuire to sew up a tear whenever it occurs, he thinks it extreme advice. It is rarely necessary to use the needle. He recalls a case, seen with Dr. C. C. Conway, in which there was a tremendous tear of the perineum. The parts were placed in apposition, the knees tied together, the patient laid and kept on one side or the other—her position being changed, when tired, by assistants—and in three or four days she was well. Repair occurred by "first intention." Would sewing-up have done any better?

Honorary Fellow Dr. Wm. L. Robinson, Danville, Va., said that the too prolonged or profuse use of chloroform during labor often predisposes to hæmorrhage, if, in fact, it does not cause post partum bleeding. The use of quinine, on the other hand, during the latter days of pregnancy, or during labor, lessens the risk of such hæmorrhage—if, indeed, it does not prevent it. Vaginal douches are of no use in cases of normal labor, if the patient has not been interfered with by unclean instruments or hands. But if there have been foul discharges from the parts, or if old tears remain without repair, be sure to use antiseptic vaginal washes. He presumes that the whole tenor of remark presupposes absolute surgical cleanliness of the accoucheur, nurse, and surroundings of the patient. If tears occur during labor, repair them at once. Touch the raw parts with carbolic acid, and apply iodoform gauze dressing, to be removed and re-applied when required, as in the surgical treatment of wounds. If the hæmorrhage of labor, or of placental delivery, or post partum hæmorrhage proves severe, or results in marked prostration, do not hesitate to resort to the subcutaneous injections of so called "normal saline solution."

Honorary Fellow Dr. Herbert M. Nash, Norfolk, Va., during the nearly forty-five years of his practice, has never met with a case of "hour-glass contraction;" and therefore doubts that there is such a thing. Cases that have been spoken of as hour-glass contraction must have been cases of either attached placenta, or else of contracted uterus leaving the cervix patulous and cone shaped up to the commencement of the uterine cavity. In cases of excessive hæmorrhage, or its usual consequences, Dr. Glasgow had recommended the use of saline solution per rectum; Dr. Robinson had spoken of the value of subcutaneous injections of saline solution. Dr. Nash does not see why the intravenous use of such solution would not be quicker in its effect and more serviceable.

Honorary Fellow Dr. George Tucker Harrison, New York, N. Y., thinks this a too important subject to let go by without the fullest kind of consideration. The comfort and safety of our wives are involved. He is sorry the announcement of the subject did not include the physiology and the treatment of the placenta. When to interfere and when not to interfere is the question. Unquestionably, under some circumstances, as referred to by Dr. Buckmaster, non-interference is our duty; under other circumstances, as pointed out by other members, interference is a necessity. At least three prominent schools of practice have their special way of dealing with the placenta—1. The Dublin School advocates seizing the fundus of the uterus through the abdominal walls, with both hands, following it down as the contents of the womb are felt to pass into the vagina, and thus press the placenta completely out. This is kept up as a continuous pressure from a moment soon after the birth of the child. This is immediate expression. 2. Credé's method is very generally misunderstood. His method really consists in assisting the natural process of after birth delivery. He practices expression only during natural "pains"—relaxing his grasp as the pain dies away. It is the practice of alternate contraction and relaxation. The pressure through the abdominal walls, of course, should follow the uterus downwards in the descent along the greater part of the curve of Carus. After full expression of the placenta, keep up for awhile slight kneading of the fundus, so as to keep the uterus, by this form of stimulation, firmly contracted—the "cannon-ball feel." 3. The German method consists in non-intervention—in leaving the placenta to the natural forces for its expulsion. It is claimed for this method that there is not apt to be so much hæmorrhage or risk of post partum hæmorrhage. If you interfere too soon, you are apt to leave portions of decidua which, decomposing and discharging, keep up foul odor, and increase the risk of septic infection.

Honorary Fellow Dr. J. S. Wellford, Richmond, Va., remarked that so-called hour-glass contractions really consists in contraction at the internal os and contraction of the fundus at the same time, while the placenta lies between—within the cavity of the uterus. After detachment of the placenta, it lies flatwise—

up and down—in the uterus; and when nature's forces are applied, it is expelled sideways. Sometimes interference is necessary for its delivery. Generally speaking, twist the placenta slightly, and out it comes.

Dr. I. S. Stone, Washington, D. C., remarked that proper attention to the principles of asepsis can prevent many of the after troubles of labor. The cause of many of the septic conditions often lies with the doctor himself, who, in the early stage of labor, paid due attention to these principles. But by the time the third stage is reached, he is tired out, anxious, and forgets to use the same precautions he was particular about when he first begun. He neglects the antiseptic handwash. So that the vaginal antiseptic douche is a good thing to keep in practice. The obstetrician must be ever watchful, and he must not intermeddle unless there is evident occasion for him to do so.

Dr. Thomas W. Simmons, Martinsville, Va., has often had cases of ruptured perineum. He is anxious to learn if there is any remedy to prevent it. He was told that atropia or belladonna would prevent such accidents; but he has tried them, and all other vaunted remedies —internally and externally—without any encouraging effect.

Dr. R. S. Martin, Stuart, Va., has always been as scrupulously aseptic in the management of labor as he is in an abdominal surgical operation. Even after the thorough scrubbing of hands with green soap, etc., surgeons often find signs of pus by the use of peroxide of hydrogen or hydrozone. Yet, ordinarily, we may safely say that hetero-infection may be prevented by thorough antiseptic baths. Special care should be paid to asepsis or antisepsis during the management of the third stage of labor. There are few doctors who do not use their hands or fingers in the vagina—if not uterus—during the third stage of labor.

Dr. Glasgow, in concluding the discussion, said that he had been very much interested in what had been spoken, as well as profited by it, and had very little to add in conclusion. Dr. Buckmaster advocated non-interference in placental delivery, and related a case where he had left the placenta in utero for two days and nights, and yet met with no bad results. He undoubtedly has cause to congratulate himself for the successful issue in this case; but, somehow, Dr. Glasgow feels that such was an experiment that we had better not repeat. Dr. Nash said he had never seen an hour-glass contraction. True, this term has been abandoned by the more recent writers on the subject. The case he detailed is very similar to the one referred to by the speaker in opening this discussion. Both of the cases would have been called, by writers a few years ago, cases of hour-glass contraction. In most of such cases, the condition present is simply an incarceration of the placenta above the contracted ring of Bandl. Dr. Glasgow is not prepared, however, to go so far as to say that the condition as described by Dewees and other older and eminent teachers, never occur.

BACTERIOLOGICAL DIAGNOSIS.*

By E. C. LEVY, M. D., of Richmond, Va.

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In presenting this paper I desire to state at the outset that I have nothing new or original to offer, but I wish to call attention to one of the directions along which the science of bacteriology furnishes most valuable aid to the physician and surgeon. My object will be attained if I shall succeed in so presenting the subject as to make clear some important facts which, though repeatedly stated in our journals and modern text-books, are not infrequently so obscured by technical verbiage and minute details as to convey no great amount of information to the general practitioner or specialist along other than bacteriological lines.

With this object in view, I would but defeat my own end by going even briefly into the history of the subject, and I trust that my failure to do so will not be attributed to any lack of appreciation of the debt we owe to those pioneers whose labors have not only placed bacteriology upon the firm scientific foundation where it now rests, but have also given an impetus to the work of thousands of others, who are each day gleaning in the fields already entered and pushing onward into new and unexplored regions whose possibilities we can but dimly conjecture.

Although the range of bacteriological diagnosis covers a vast and ever widening field of usefulness, still, at the present time, there are four diseases in the diagnosis of which the services of a bacteriologist are most commonly sought—tuberculosis, gonorrhœa, diphtheria and typhoid fever—and it is to the consideration of these that I shall limit this paper.

It is unnecessary to enter into a description

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of the methods most commonly employed in making a bacteriological examination in these diseases; for they are known to all of you, and to describe fully the methods which are used in even one of the four would consume more than the entire time I purpose occupying. For these reasons, methods will be but briefly referred to, more attention being given to the significance of bacteriological diagnosis and the conditions under which it is of greatest service in the above-mentioned diseases.

Tuberculosis.—The etiological relation of the bacillus tuberculosis to the disease whence it derives its name is now universally admitted. The form of tuberculosis in which a bacteriological diagnosis is most frequently called for is in pulmonary phthisis; less frequently in diseases of the pleura, peritoneum, genito-urinary tract, and lesions of the skin and mucous membranes.

In pulmonary tuberculosis, bacteriological examination of the sputum is recognized as an always valuable, ofttimes indispensable, procedure. The method of demonstrating tubercle bacilli in sputum is now so generally known that no description of technique will be given, nor is it necessary to describe the bacilli themselves. I will only say that for ordinary use the best stain is carbol-fuchsin (as it can be kept on hand always ready for use), followed by 25 per cent. nitric acid for decolorization, and an aqueous solution of methylene blue as a counter-stain. Personally, I prefer this method to those in which the decolorizing agent and the counter-stain are combined in a single solution.

Where the sputum contains the characteristic cheesy masses, or where the bacilli are abundantly and somewhat evenly distributed throughout, the demonstration of their presence should be attended with no difficulty. Under the opposite conditions—where no cheesy masses can be seen, or where the bacilli are few and unevenly distributed—the examination is often tedious. Under these circumstances, it is frequently necessary to prepare and examine half a dozen or more spreads in order, on the one hand, to find at last only two or three bacilli, or, on the other, to be convinced that the specimen does not contain them. When the usual mode of examination fails to reveal their presence, recourse must be had to more refined methods; such as boiling the sputum with liquor potassæ, after which the thinner liquid, thus obtained, is allowed to settle in a conical glass for twenty-four hours or longer, or whirled in a centrifuge for a few minutes. In either case a few drops of sediment will be obtained, in which the tubercle bacilli, should any be present, can be more readily found by staining methods, being contained in a smaller amount of detritus.

Should the most careful examination fail to demonstrate their presence in any instance where the clinical history is suggestive of phthisis, other specimens should be examined, in collecting which certain precautions should be taken. If expectoration is scanty, it may be necessary to instruct the patient to save the entire sputa of twenty-four hours, using for the purpose a clean wide-mouth bottle, provided with a tightly-fitting cork to prevent evaporation. He should also be instructed to cleanse his teeth and mouth thoroughly after each meal, in order to avoid the presence of food-particles. Where expectoration is profuse, the sputum collected in the early morning is sufficient, the same precautions being taken to insure the absence of foreign particles. The phlegm obtained by hawking should be discarded, only such as is brought up from the bronchi and lungs being preserved for examination. If, after five or six painstaking investigations, extending over a period of several weeks, no tubercle bacilli are found, it may be reasonably supposed that the case is not one of consumption.

A word as to the influence which the finding of tubercle bacilli has upon prognosis. By means of sputum examination, phthisis is now positively diagnosed at a stage when symptoms may be merely suggestive and physical signs insignificant or absent. The presence of the bacilli is positive evidence of the nature of the trouble, and if the proper steps are taken at once, a fair or even a large percentage of these incipient cases can be cured. While statistics show that about 7 per cent. of all deaths are caused by phthisis pulmonalis, the records of the post-mortem room show that at least 50 per cent. (much higher according to some) of all cases upon which autopsies are held show evidence of having had the disease during some period of their lives. Comparing these two sets of figures, we see that at the lowest estimate 86 per cent. of cases of incipient phthisis recover. In giving a prognosis in any beginning case, heredity, general condition of the patient, habits and environment are the factors to be considered.

In tubercular pleurisy, staining methods applied to aspirated fluid often give negative results, and even the injection of the fluid into a guinea pig may fail to demonstrate the presence of tubercle bacilli. When the conditions which obtain in this form of tuberculosis are

contrasted with those present in the pulmonary form, the reasons for this are apparent, but to discuss them is beyond the scope of this paper.

The use of the centrifuge is almost indispensable in examining a pleural exudate for tubercle bacilli, as it is also in examining urine for the same purpose.

Gonorrhœa.—The opinion of bacteriologists as to the etiological relation of the gonococcus to gonorrhœal inflammation has not been a constant one, but it is now very generally admitted that this relation does exist. For the purpose of examination, a small drop of the supposed gonorrhœal pus is spread on a cover-slip, stained with methylene-blue in the usual manner, and examined under the microscope. The gonococci appear as small rounded bodies, usually in pairs or groups of four, with their contiguous surfaces flattened. Especially to be noted is the fact that these organisms are frequently found in the pus cells, not simply between them as is usually the case with the other pus-cocci. Inasmuch as there are sometimes present in the urethra, under other conditions, micrococci which closely resemble the gonococcus, a further test must be applied. Such a differential point is found in the fact that if Gram's method of staining be employed the gonococci give up their color, while it is retained by other forms with which the gonococcus might be confounded. The gonococci may then be made to take up a second stain, and in this manner it is possible to secure a specimen in which the gonoccoci will appear brown, while all other micrococci present will be of a violet color.

Although it is interesting to apply the bacteriological test in every case of urethritis, yet it must be admitted that to do so is frequently superfluous, the nature of the trouble being usually sufficiently clear from a clinical standpoint. There are, however, certain instances where such an examination becomes important. The chief of these are: (1) In very mild cases of urethritis where an element of doubt exists as to its nature; (2) in certain medico-legal cases, such as alleged rape; (3) in lesions, other than urethritis, supposed to be of gonorrhœal origin, such as joint affections, purulent ophthalmia, vaginitis, endometritis, and pyosalpinx; (4) where a patient with a chronic urethral discharge desires the opinion of a physician in reference to the permissibility of marriage.

Diphtheria.—That this disease is due to the bacillus diphtheriæ (Klebs-Löffler bacillus) is now questioned by no one who is in a position to form an opinion on the subject, and nowhere does bacteriological diagnosis prove of greater or more essential service than in the prompt recognition of the nature of pseudo membranes which cannot be positively diagnosed from clinical evidence alone.

As diphtheria, in a large proportion of cases, has its starting point upon the tonsils, even where later on other parts of the fauces or portions of the air-passages become involved, I shall first call attention to the two other conditions with which it may be confounded in this location.

It is but a few years since our text-books and professors taught that tonsillar diphtheria had only to be differentiated from follicular tonsillitis, and the points of distinction between the two were laid down with mathematical exactness; all of which was a source of great satisfaction to the student when examination time arrived. When, however, he left college and was called upon to assume the responsibility of diagnosing and treating these conditions, he found, unless he had the unusual good fortune to encounter only typical cases, that it was not, after all, so simple a matter. True, he saw in many instances the classical punctate exudation, rather mild constitutional symptoms, and rapid recovery without complications or sequelæ. He also saw cases with extensive, thick, rapidly-spreading, tightly-adherent membrane, great glandular enlargement, the gravest constitutional symptoms, going on to death or at best to tedious recovery, which was often retarded by the most serious secondary troubles. But if his experience was the usual one, he encountered a third class of cases which, try as he would, he could not make fit any description in his text books. His usual course was then to err on the side of safety, and call every case diphtheria which was not manifestly follicular tonsillitis. As time went on, however, if he was really a conscientious physician, not satisfied with this course in spite of the reputation for curing diphtheria which almost inevitably followed in its wake, he began to realize that there were pseudo-membranous inflammations of the throat which were neither follicular tonsillitis nor diphtheria. It was, most probably, this class of cases to which some applied the term "diptheritic sore-throat."

With the recognition of the constant relation between the Klebs-Löffler bacillus and true diphtheria, the term *pseudo-diphtheria* came into vogue. We have, then, the three diseases—follicular tonsillitis, pseudo-diphtheria, and diphtheria—to differentiate. It has not become necessary essentially to modify our idea of follicular tonsillitis, except to realize that

occasionally even the mildest case of this affection may be due to the bacillus diphtheriæ, and may hence be capable of giving rise to true and virulent diphtheria in those exposed.

With the classification of pseudo-diphtheria as an independent disease, it became necessary to define the term and point out the distinction between this affection and true diphtheria. Pseudo-diphtheria, then, is an acute inflammation of the tonsils, or mucous membrane of other parts, characterized by the presence of a pseudo-membrane* in which are found one or more forms of the common pyogenic micrococci. The local trouble in pseudo-diphtheria is commonly far less extensive than in true diphtheria, the glandular envolvement usually less, and the systemic symptoms milder. No one of these points, however, can be absolutely relied upon. There are cases of pseudo diphtheria in which the entire surface of both tonsils, and frequently the soft and hard palates and a considerable portion of the visible pharynx are covered with a thick adherent, rapidly-spreading membrane. In many of these, the constitutional symptoms are severe at the start, and the glandular envolvement marked. The only constant differences between the two affections, from a clinical point of view, are the insignificant fatality and the rapid and the complete recovery without complications in the one, as contrasted with the opposite of these in the other. It is obvious that to delay diagnosis (and, consequently, appropriate treatment) until the nature of the case has become apparent by recovery on the one hand, or the development of dangerous or fatal complications on the other, is a most unsatisfactory solution of the problem. It is in just this class of doubtful cases that bacteriology offers a prompt and trustworthy means of differentiation.

For the recognition of the bacilli of tuberculosis and gonorrhœa, staining methods applied to cover-slip preparations usually suffice. No differential stain for the diphtheria bacillus has as yet been discovered, but we have a satisfactory means of recognizing them by the rapidity with which they grow on Löffler's medium at body temperature. This medium consists of blood-serum 3 parts, and nutrient bouillon (containing ½ per cent. glucose) 1 part, mixed, pipetted into tubes, and then coagulated and sterilized while the tubes are in a slanting position, thus securing an abundant surface for the development of the germs.

A sterilized swab is wiped over the pseudo-membrane and then over the surface of the culture medium. The tube is then placed in an incubator at body temperature (37° cent.), and examined at the end of from twelve to fifteen hours. A more or less abundant growth of bacteria will usually be found at the end of this time. Upon removing a portion of this growth, making a cover-slip preparation, staining with methylene-blue, and examining under the microscope, we find either the easily recognized Klebs-Löffler bacilli, alone or along with micrococci, or else the latter alone. The point is, that no other bacilli which may be present in the throat, and which may resemble the bacillus diphtheriæ morphologically, will produce a visible growth on this culture medium at the end of so short a time. By this means, a positive diagnosis can be arrived at in from twelve to fifteen hours in any doubtful case.

Since the advent of antitoxin, exact and early diagnosis of diphtheria has come to assume much greater importance than in former years; for the remedy is of use only in true diphtheria, and, moreover, of benefit only during the first days of the disease.

I am not unaware of the fact that the American Pediatric Society, as well as every physician who realizes the vital importance of early administration of antitoxin in diphtheria, recommends that in every case where a clinical diagnosis of diphtheria can be made, the antitoxin should be administered at once, without waiting for a bacteriological report. In this advice I most heartily and unequivocally concur. But the adoption of this course does not in any way lessen the importance or necessity of bacteriological diagnosis.

There are undoubtedly some cases where a positive and prompt clinical diagnosis can be made; but when we remember, as I have already pointed out, that an extensive deposit and other commonly recognized symptoms of diphtheria may be present and the case yet be one of pseudo-diphtheria; while *per contra* a minute exudation with very little constitutional involvement may be truly diphtheritic, we see, even when accepted, that the advice of the American Pediatric Society in no sense lessens the importance of determining the nature of the case positively at as early a date as possible.

Relying solely upon a clinical diagnosis, antitoxin will often be given in cases which

*The term pseudo-diphtheria, while the best that could be found, is a little unfortunate, inasmuch as "*pseudo*" was already compounded with two other terms commonly used in connection with diphtheria, viz: pseudo-membrane and pseudo-diphtheria-bacillus. The first of these terms is applied to any false membrane, whether diphtheritic or not; the second to a non-pathogenic bacillus which seems, according to most observers, to be a modification of the Klebs-Löffler bacillus, and which has no connection with either diphtheria or pseudo-diphtheria.

the bacteriological report of the following morning will show to be merely pseudo-diphtheria. In such instances, the relief to the patient, his family, and his physician will amply justify whatever trouble has been taken to arrive at this information. Besides this, there would then be no reason for a repetition of the antitoxin, with the accompanying expense and possibly inconvenience to the patient, it having been shown that the disagreeable symptoms which occasionally follow antitoxin administration are more apt to occur after its injection into individuals who are not suffering with diphtheria.

Again, a case may show such rapid improvement after the first dose of antitoxin that the attending physician may have serious doubts of the correctness of his original diagnosis, and may hence be not sufficiently careful in the subsequent management of the case—a course which he will regret, but cannot correct, if, later on, cardiac or renal trouble, possibly fatal in its issue, should develop. Had his diagnosis been confirmed by a bacteriological examination, this care would have been exercised and the unfortunate result possibly averted. Thus it will be seen that, even in apparently unmistakable cases of diphtheria, a bacteriological diagnosis should not be dispensed with if it can possibly be obtained.

But there still remains that large class of cases in which the most skilled clinician will often be in doubt, and here the laboratory diagnosis is indispensable. Especially is this true where there are other children in the house and the question of isolation arises, with its enforced hardships for all and its anxieties for the parents.

There is yet another question which bacteriology can decide, viz., when a convalescent case of diphtheria may be allowed to mingle with others, without danger of conveying the disease. No definate time in days or weeks can be laid down, the absence of the diphtheria bacilli from the throat being the only trustworthy criterion. These may disappear in a few days or may persist for a month or longer.

In lesions, seemingly diphtheritic, situated upon surfaces of the body not commonly the site of inflammations of this character, such as the conjunctiva, vagina, or skin, the necessity of bacteriological investigation is self-evident.

Typhoid fever.—In typhoid fever bacteriology offers three modes of diagnosis. The first of these consists in detecting the presence of typhoid bacilli in the stools. In the absence of any differential staining method, it is evident that mere morphological examination of a substance so rich in bacteria as fecal dejections must be useless. When we come to consider cultural methods, we find the difficulities almost equally great. First among these is the fact that there is always present in the human intestine the bacillus coli communis—a micro-organism which in appearance and in most of its cultural features exactly resembles the typhoid bacillus.

The discovery made by Elsner, that the addition of one per cent. of potassium iodide to culture media will inhibit the growth of all known bacteria except the bacillus typhi abdominalis and the bacillus coli communis, is of value in eliminating all but these two forms. But the subsequent differentiation of these, one from the other, is tedious, requiring great care and longer time than most physicians who call in the services of a bacteriologist to aid in diagnosis are willing to give. Besides this, it is by no means certain, especially during the earlier part of the disease—the time when clinical diagnosis is most apt to be doubtful—that a given specimen of feces will contain the bacilli even where typhoid lesions exist.

The second method consists in puncturing the spleen with an aspirating needle and making cultures from the material thus obtained. This method is said to be a very reliable one, and those who advocate its employment claim, that puncturing the spleen is as free from danger, if the proper precautions are taken, as is exploratory puncture of the pleural cavities. Even if we could be convinced of the truth of the latter part of the above statement, still the procedure, however applicable to hospital patients, is hardly one which will ever be adopted by physicians in private practice.

So much for these two methods, neither of which has thus far proved of great value—the first on account of its uncertainty; the second on account of its inadvisability. These two tests have the common feature of seeking to establish a diagnosis by methods whose end is the detection of the typhoid bacilli themselves.

The third method, known as Widal's test, sets to work with an entirely different idea. In order to explain the principle upon which this test is founded, it will be necessary to present a few facts, in referring to which I may seem to be leaving my subject.

Although foreshadowed in observations made by Charrin and Roger as early as 1889, and by Metchnikoff in 1891, the first step towards the elaboration of this test may be said to have been made by Pfeiffer in 1894, and advocated by him as a meams of differentiating the spirillum of Asiatic cholera from other similar

micro organisms. Pfeiffer found if a bouillon culture of the spirillum choleræ Asiaticæ was injected into the peritoneal cavity of a guinea pig which had been artificially rendered immune against infection by these germs, and after a few minutes some of the fluid was withdrawn and examined, that the spirilla had lost their power of motion and undergone degeneration. This reaction did not occur when other spirilla of the so-called cholera group were injected into a guinea pig immune against Asiatic cholera, or when the spirilla of Asiatic cholera were injected into a guinea pig immune against any other member of the group. In other words, the reaction was a specific one.

The next step was the discovery that this test could be applied without the necessity of introducing the suspected culture into the abdominal cavity, the reaction being observed equally well when a drop of serum from the blood of an immunized animal was mixed with the suspected culture and examined in a hanging-drop preparation. The latter method also possessed the advantage of showing, in addition to the loss of motility, a characteristic clumping or agglutination of the bacteria. It was next shown that the same method was applicable to the identification of other bacteria, notably the bacillus of typhoid fever.

Thus far, the principles above briefly explained, had been taken advantage of chiefly as a method of identifying certain forms of bacteria. It only remained for some one to see the practical value of reversing the terms of the proposition, and Widal's test for typhoid fever is merely the outcome of this last step. In other words, a specific reaction takes place when a culture of a given germ is subjected to the action of serum from an animal immune against that special germ. Former investigators along these lines had been making use of this fact to identify, by means of a *known blood-serum*, a culture whose nature was unknown; in Widal's test a *known culture* is employed and the blood-serum to be tested is the unknown quantity. With this explanation, the mode of making the test is quickly given.

The first requisite is an agar culture of typhoid bacilli. From this culture another is started in nutrient bouillon, and the latter is ready for use after from twelve to twenty-four hours in the incubator. Blood-serum may be obtained from the patient upon whom the diagnosis is to be made either by drawing a small amount of blood from a vein by means of a hypodermic syringe, or serum may be obtained by the action of a small blister-plaster.

It has been shown that it is not necessary to have fresh blood-serum, the test giving good results when instead of this there is employed blood dried on a slip of sterilized glass, mica, or card-board. The advantages of the latter method are that a needle puncture furnishes sufficient blood for the test, and in the dried form it can be transported through the mails to whoever is to make the examination. Before making the test with dried blood it is necessary to place upon it a drop of sterilized distilled water.

Having, then, the fresh bouillon culture of typhoid bacilli and the dried blood or blood-serum from the case to be investigated, the examination is made as follows: A small drop of the culture is taken from the tube and placed on a perfectly clean cover-glass. To this is then added a portion of the blood-serum or moistened blood. The cover-slip is next inverted over the concavity in a hollow ground slide, around which vaseline has been smeared to prevent evaporation. The drop of bouillon and serum is then hanging in a smalll moist chamber and is ready for examination under the microscope.

If the preparation has been rapidly made and brought into focus, the typhoid bacilli may be seen moving about with great rapidity. If the case from which the blood was obtained was one of typhoid fever, it will soon be noticed that this motion is becoming slower, and that the bacilli are beginning to arrange themselves into little clumps. After a few minutes, if the reaction be typical, there will be an entire cessation of motion and the bacilli will become agglutinated in masses throughout the drop. This reaction is said to occur only with the blood of one who has typhoid fever at the time or who has recently passed through an attack.

This is, in a general way, the method of employing Widal's test. Such points as the relative proportions of the bouillon culture and serum to be employed, the length of time within which the reaction must occur, and the comparative value of serum and dried blood, it is beyond the scope of this paper to discuss. A negative result obtained by this test when made before the seventh day of illness does not exclude the possibility of typhoid fever, as the production of the substances in the blood which give rise to the reaction does not occur with any degree of constancy before that time. In certain instances it may be delayed far beyond this limit.

Widespread application of this test being still very recent, there are certain points in connection with it which are as yet undecided, and

which must remain so until statistics from more extended investigations have been gotten together.

I have purposed, in concluding this paper, to make a brief résumé of the subject; to devote a few words to mentioning the other diseases in the recognition of which bacteriology plays a prominent rôle, and to direct attention to the increased importance which bacteriological diagnosis will assume when other infectious diseases are placed on the list of those for which we possess specific medicament in the form of antitoxins. I have, however, so far transcended the limits I had set for this paper, that I must now bring it to a close.

I trust that the foregoing outlines may have been of value to some of you, and, in concluding, I desire to thank yon, especially those of you who realize as fully as I the shortcomings of this paper, for your patient consideration.

Discussion.

Dr. L. B. Anderson, Norfolk, Va., has been intensely interested in all matters relating to bacteriology since the recent efforts have been made to establish it as an essential or all-important science in medicine. The reader of the paper had only indicated some points which he would be glad to have more fully explained. We are told that when certain bacilli are found in connection with certain diseases, they are causative of those special diseases. But Löffler says, for instance, that diphtheria bacilli are often found in the throats of persons who have no diphtheria; and, again, we find cases of diphtheria in whom no bacilli are found. Such being the affirmation in general of one of the most learned of bacteriologists, Dr. Anderson does not see how we are always to get things straightened out. Koch, during the epidemic of cholera in Hamburg, confesses that he could find no bacilli in some cases which he had to admit clinically were cases of cholera, and oftentimes he found the cholera bacilli in persons who had not had, and did not have, any sign or symptom of the disease. The fact is, our knowledge of bacteriology has not yet reached that degree of certainty which makes our information reliable. Furthermore, as a general thing, it appears that the professions of bacteriology are most positive, unfortunately, about those very diseases regarding which we are not in need of helps for diagnosis. For instance, as a rule, typhoid fever, cholera, diphtheria, tetanus, etc., are frank diseases. Their signs and symptoms pretty promptly and accurately tell on themselves by the time they are suspected. The observant, practiced physician—the good old doctor, in short—has recognized the disease, and has determined on his plan of treatment long before the bacteriologist has finished with his cultures in search for the definite bacilli. Sometimes he succeeds in finding them; sometimes he don't. And yet the intelligent, faithful physician, arguing upon the truism that "where there is so much smoke, there must be some fire," recognizes the presence of the disease: his confidence in the correctness of his diagnosis is not shaken by the failure of the bacteriologist to find the specific germ. And then, when the bacteriologist comes with his tubes containing the looked-for cultures in one hand, he brings in the other the hypodermic loaded with the serum that is supposed to be the antidote, and proffers to use it with promises of success. For years we have been condemning Hahnemann, but now it looks as if, under the leadership of the bacteriologists, we are to fall into his ranks and keep pace to the drum as it sounds "similia similibus curantur."

Honorary Fellow, Dr. E. W. Row, Orange, Va., does not understand this subject of bacteriology now as much as he thought he did when this new science loomed up before the professional world. To illustrate, six years ago, he was adjudged to be the victim of pulmonary tuberculosis. The usual signs and symptoms were developed, and bacteriologists assured him that bacilli characteristic of the disease were abundant in his sputa. He continued to work, however, until bronchial asthmatic attacks became so persistent and severe that he had to give up in despair. Last fall, he was persuaded to spend the winter in Florida. He was so prostrated on the journey that he scarcely had hope of reaching his destination—a healthy country place in Florida—away from the cities, so-called health resorts, etc., which were crowded with phthisical patients. He lived as much as possible out of doors, gradually increasing the amount of his daily exercise in the invigorating climate of that season in proportion as his strength improved. In the spring, he returned home, had an attack of pneumonia, got well, and has been in a tolerable state of good health ever since. Bacteriologists teach that tubercular bacilli rapidly multiply and permeate the tissues of the lungs after they have once found a home. His present condition of health justifies the hope that he will meet this Society in session next year at Ocean View, and the year after—wherever it may meet. But he is curious to know what have become of the tubercular bacilli that filled his lungs last winter—that

had become so abundant as to be marked under the microscope after staining. Why didn't they stick, and keep steadily on in their deadly work of excavation after having gained such a positive foothold?

Dr. Wm. S. Gordon, Richmond, Va., naturally takes much interest in this discussion. Tuberculosis having been cited in illustration, he would like to know whether or not a case of tuberculosis ever occurs where no tubercular bacilli exist? He wants to know, further, whether or not bacilli have been found in the lungs without other evidence of tuberculosis? As to typhoid fever, he referred to the case of a lady, resident in the eastern section of Virginia, who had the fever during her pregnancy, and miscarried. He would like to know whether or not the typhoid bacillus has ever been found in the amniotic fluid?

Dr. J. Allison Hodges, Richmond, Va., referred to three cases of tuberculosis in his practice, in which the clinical histories clearly indicated the presence of tuberculosis, and yet in which, after repeated searchings, no evidence of tubercular bacilli was ever detected.

Dr. J. Mettauer Winfree, Richmond, Va., misunderstanding the scope of the subject, began to speak of some skin eruption, when the President informed him that his remarks were not bearing on the subject in hand.

Honorary Fellow, Dr. Herbert M. Nash, Norfolk, Va., has long had high respect for the teachings of bacteriology. Too much has been proven in its favor for us now to undertake to discredit its great discoveries. For instance, specific diseases have their specific germs. It may be that the germ of each one is not definitely known as yet, but enough is known of the bacteriology of most of these specific diseases to justify our reasoning by analogy with reference to the few others. Some contagious diseases do not appear to be communicable to a certain few individuals—they appear to be immunized by circumstances which are not clearly understood. But this lack of understanding does not warrant the assertion that the cause will not be found out by some future investigations. Bacteriology is yet in its infancy. Claims have been made against it which its maturity only can satisfy. He thinks the paper of the essayist a good one—it deserves far more of commendation than of such criticism which lays the axe at the basis of the science.

Dr. Arthur Jordan, Richmond, Va., remarked that bacteriology needs no defenders. It does need more workers in the field to devise methods and means to unfold its revelations. He looks upon the lately applied principle of centrifugal force—the centrifuge—as a most valuable accessory to the armamentarium of the bacteriologist. He knows of no simpler nor easier way to find bacilli that may be diffused only here and there through a fluid. Then, too, we learn much by studying the different stainings required by different germs. Thus, all authorities now accept the "gonococcus" of Neisser to be the cause of gonorrhœa. It stains readily with all the aqueous aniliu dies, but *not* by Gram's method, thus distinguishing it from the ordinary pus cell as obtained from an acute abscess or boil. This distinction at once diagnoses gonorrhœa from non-specific urethritis. Its importance in verifying virginity whenever questioned is too apparent. And yet such differentiation is what bacteriology enables one to do. A partial diagnosis of bacteria may often be made by the method required for preparing different specimens presented for examination. But all of these things are rudimentary. As for the bacteriology of typhoid fever, the speaker can add his testimony in favor of Widal's test. It is not difficult to make, and it is quite satisfactory. He cannot agree with the statement that one who has practiced for years, even with his tactus eruditus, etc., can verify his diagnoses as quickly or as satisfactorily as does the bacteriologist. Of course, there are cases which illustrate the saying that he who runs may read; but often the practitioner rises from the bedside simply apprehensive that the child has diphtheria—the case remains simply "suspicious" for several days if let alone. Here, bacteriology promptly removes suspicion or changes apprehension into knowledge. Besides, the speakers who decry the value of bacteriology must admit that cases of typhoid fever are constantly occurring, which may run for several days before diagnosis could be made by clinical signs and symptoms. Widal's test acts promptly.

Dr. Levy, in concluding, was glad to learn that so many general practitioners can promptly tell diphtheria; but many eminent authorities say they can't, without the aid of bacteriology. It is very, very exceptional when the bacteriologist who knows his business fails to produce cultures of diphtheria or of cholera, etc., if the germs are within reach. And it is likewise exceptional to find germs in a person not immunized who has not had or is not in imminent danger of having the disease to which those germs belong. As to the "similia similibus" allusions of Dr. Anderson, no statement was less founded on fact. In truth,

serum-therapy, with its wonderful triumphs even within its brief lifetime, is a death dealing blow to all such doctrines as homœopathy. It is the most remote thing possible from the similia—it is *anti*-toxin. The bacteriologist experiments with the *toxin* to discover the disease; and thus knowing the toxin, he is enabled to help suggest the *anti*-toxin. If time permitted, Dr. Row's case would furnish an excellent text in favor of bacteriology. It is known that tubercular bacilli come from outside; that they are inhaled and lodged on the mucous surface of larynx or bronchial tube, etc. It is to be hoped that, in his case, the violent coughing spells enabled him to cough up and get rid of all the bacilli or spores before they became imbedded in the tissues. As to Dr. Gordon's questions, failure to find bacilli sometimes results from careless collection of material; for instance, an undue amount of mucus may be removed, whereas it is well known that we do not usually—certainly not always—find bacilli in mucus. The same remarks probably apply to Dr. Hodge's cases. Tubercle bacilli do not thrive in a healthy medium—they soon die out. But if there be "suitable soil" in which to become implanted—if disease of the part exists or is produced—then the tubercle bacilli have the essential conditions present for their rapid multiplication. With reference to *typhoid fever*, Sanarelli found by experiments that the anatomical lesions and symptoms are the same, whether following infection by the typhoid microbe or intoxication by its products.

THE SUTURING OF WOUNDS--THE ADVANTAGES OF THE ABSORBIC SUTURE BURIED IN ASEPTIC WOUNDS.*

By HENRY O. MARCY, A. M., M. D. LL. D., Boston, Mass.

Ex-President American Medical Association, Etc.

Notwithstanding the revolution in surgical procedures, in a large minority of operative wounds, made in healthy structures, suppurative processes in some degree still pertain. The surgical technic is complete for making a wound aseptic, but the difficulty is in maintaining it in this condition.

The cause of this is definite, viz.: an open wound. The remedy is to be stated with equal emphasis: hermetically close the wound and seal at the time of operation, without drainage. Without detailing at length the discussion on the drainage tube, its purpose and dangers, it may be asserted that in aseptic wounds it is worse than useless.

To the micrococcus pyogenes albus may be attributed the more common reason why wounds, under abundant antiseptic dressings, take on infection when drainage is used. It is believed also that this is the cause of stitch abscesses, and the more usual source of operative infection coming from the surgeon's own hands. Careful hand disinfection is of much greater value to the patient than a marble hall for an operating amphitheatre.

Sutures.

After discussing judicially the varieties of suture material, the deduction is made that all aseptic wounds should be closed by absorbable sutures, under the most careful of aseptic conditions; and that sub-cuticular sutures should be useful for the coaptation of the skin. Then the wound should be dried and sealed with iodoform collodion, reinforced by a few fibres of absorbent cotton.

Catgut is to be condemned, not so much from its difficulty of sterilization as from its inherent defects—a large share of its strength resulting from its being twisted and kept dry. When wet, as is necessarily its condition in the tissues, it is elastic, unreliable in knotting, and untrustworthy. Before twisting and drying, it is a very thin flat band of connective tissue, the fibres of which cross obliquely for the physiologic purpose of accommodating the intestinal contents, and is not unlike a very delicate silk fabric cut upon the diagonal.

The advantages to be obtained from the use of connective tissue, as a suture material, are apparent, not alone because it is absorbable, but because, as the author has repeatedly demonstrated by studies upon animals, it is first surrounded by leucocytes which, little by little, invade the suture. As the process of absorption goes on, these cells are changed into connective tissue corpuscles, and, as a subsequent, the suture material is more or less completely replaced by a living band of connective tissue; this, of course, in many instances proving an advantage of the first importance.

Earlier the author used tendons from the moose and caribou, the advantages of which are emphasized in a paper read by the writer at the International Medical Congress in London in 1881. Such tendons have been used for the sewing of robes from time immemorial by the North American Indians. The following year, as the result of systematic and extended obser-

*Abstract of a paper read at the British Medical Association, Montreal, September 2, 1897.

vations, he ascertained that the tendons taken from the tail of the kangaroo were greatly to be preferred, since they were smooth, even, in any variety of size, had never been subjected to decomposition and were much less difficult of sterilization, while in strength they exceeded any other animal structure. When properly chromocised they held in the tissues about three months. They are now so well known and generally used that only reference to them is required.

Method of Application.

Coaptation and fixation at rest, with as little force as possible, of like structures, is the object sought. Suture material more than required to secure this purpose is detrimental. It must be applied with a minimum of devitalization of the tissues.

The interrupted suture is faulty in that it holds at only the single points of insertion, and in order to coapt the structures in large wounds, undue compression, often to devitalization of the parts constricted, must be used. Each stitch requires a knot which is slow of absorption. Like structures as far as possible should be joined, fascia to fascia, muscle to muscle. etc. When coaptation has been accurate, there are no pockets left for the undue retention of fluids, and, as a consequent, no drainage tube can be required.

The author much prefers the full curved Hagedorn needles, since they penetrate the tissues with ease and accuracy and may generally be used without the intervention of forceps. The continuous suture requires but a single knot, and undue constriction is less liable, since a compensation occurs equalizing the force applied to the entire suture As a rule, fatty structures should not be sutured, since aseptic fat necrosis not seldom results. They are usually not hæmorrhagic and are passive, and coaptation of fatty structures follows the fixation of the muscles, fascia and skin.

The over and over Glover's stitch, is faulty in that it unduly constricts the enclosed tissues The author of the paper applies the suture deeply from side to side; the needle is introduced *parallel* to the long axis of the wound, and hence called by him the *parallel suture.* The needle is introduced exactly opposite the inner groove of the preceding stitch, and, when drawn upon, it will be noted that the surfaces are evenly coaptated and that the suture is deeply implanted in healthy tissues, crossing the wounded edges at right angles. The subcuticular suture is effected in precisely the same manner, and the wound is sealed.

Results.

An *aseptic* wound, thus closed with buried *aseptic* tendon sutures, will remain *aseptic*, and in well vitalized structures will be followed by primary union. No expensive and troublesome dressings are required.

The subsequent nursing and care is very greatly diminished.

The anxious foreboding of the surgeon "lest something will go wrong with the wound" is avoided.

No stitches are to be removed, reducing greatly the dread and anxiety of many patients.

Safety is greatly enhanced and the period of convalescence shortened.

When the work has been done with care, often the resultant cicatrix is scarcely visible, of much importance in some portions of the body.

Some operations, hitherto impossible, have been rendered feasible by the use of the buried absorbable suture—*e. g.*, the reconstruction and reformation of the obliquity of the inguinal canal in the male, upon which is dependent the cure of hernia, the method of suturing only varying, as advocated by different authors. Indeed, it was for the *cure of hernia* that the author first used buried animal sutures in 1870. He is now in his four hundredth series of hernia cases, and reports a continued cure in over ninety per cent. of the entire number, without a single death.

In laparotomy, the closure of the abdominal wound is greatly strengthened by the use of aseptic absorbable sutures. It is estimated that ten per cent. of laparotomies, where the wound is closed by a single line of deep interrupted sutures, are followed by hernia. Dr. Morey reports more than five hundred cases of aseptic laparotomies in his practice with but a single resultant hernia.

In closing, the writer urgently recommends that every aseptic surgeon familiarize himself with the method of wound closure by means of absorbable, buried sutures, preferably tendon, and not alone predicts their early general adoption, but that in importance it holds the first place in the technic of modern wound treatment.

The Pepsin-Cordial (of P. D & Co.)

This elegant preparation has been so improved that an ordinary dose of one teaspoonful will dissolve 3,000 grains—instead of 2,000, as formerly—of coagulated and disintegrated egg albumen.

THE FORGOTTEN DOCTOR.*

By J. ALLISON HODGES, A. M., M. D., Richmond, Va

Professor of Diseases of the Nervous System, University College of Medicine, Richmond, Etc.

I thank you for the cordiality of your greeting. The honor of this courtesy to so recent a member of your Association is but another echo of that unvarying kindness which distinguishes a Virginia welcome, and which endears to every stranger's heart the Virginia people.

I am present, at your bidding, to discuss some subject of mutual interest to the public and to the profession. Accordingly, I have preferred to discard on this occasion the discussion of any question that is of merely technical and professional interest. Neither do I come to you with any studied oration of either literature or science. I come from the busy world, from a life taxed with all the penalties and necessities of exacting duties, and from a life that is devoted by professional requirements to the upbuilding and uplifting of humanity in every phase of its existence. Stirred, then, by the scenes upon that shifting stage, and inspired by these environments, I bring to you a message to-night of practical import and comradely sympathy, for my theme is "*The Forgotten Doctor.*"

And I would remind you in the beginning, ladies and gentlemen, that this is intended to be no memorial address or *post-mortem* eulogium, but, instead, a feeble presentation of some of the living issues that confront us as physicians in our daily work, and which tendencies, if not overcome, will eventually embarrass our noble profession in its highest development for the common good. When the history of the 19th century shall be written, the record of its marvellous advances in the arts and sciences will be its crowning glory; and yet, judging from the past, I doubt if adequate credit will be bestowed upon the medical profession for its grand and beneficent work in the preservation and prolongation of human life.

In estimating a civilization, it is the neglected and forgotten man or class of men, more than any other, that must be taken into consideration. The unseen hand is often the power behind the throne. No community is intelligent because it contains a few men of culture, nor moral because it contains a few women of virtue, nor healthful because it contains a few men of muscle and brawn. Moreover, in proportion as any community in the development of its resources or institutions, lays emphasis on its few rich men, or its few cultivated men, it is likely to forget and neglect the foundations of its strength. Hence, to consider one class of men as more important in possibilities to the common weal than another, is to inculcate a doctrine which is opposed to the dominant creed of our country, and of our race; and yet, Mr. President, such I believe to be the tendency of these times. As a result, the medical profession does not, in my opinion, occupy that exalted position which it once claimed, and to which its great benefits conferred on suffering humanity entitle it. The fault may lie within our own ranks, but the fact still remains that, in the eyes of the public at least, ours is but an honorary profession, and entitled to but slight consideration, and to few of the emoluments of social or civil life. In matters of public welfare, we have been content in the past, to allow the politicians to fight the battles for us, and so indifferent have we seemed, that negligence in these matters has been assumed to be indifference, and as a consequence our voice is not regarded, even if it be the united sentiment of such an Association as this; and moreover, if it even be upon a subject of peculiar professional interest and one requiring especial technical training. Before both Houses of Congress, bill after bill has appeared relating to the public health, substantiated by the highest medical endorsement, but these appeals of the physicians for the public good have fallen upon dull and senseless ears. Even in this State, renowned for its culture and intelligence, a similar fate met a like bill during twenty successive Legislatures, and at last it was passed, but with scarcely a sufficient appropriation to make it effective. What is the cause of this state of affairs? Do the masses need education, or do the politicians need money?

To answer this question satisfactorily would come as near running a man demented as to tell the difference between Cleveland adversity and McKinley prosperity. I believe that the solution of such questions could be effected promptly and satisfactorily, if each one of you in your several localities made your personal and professional interests felt in practical politics I must believe that the public in general has no just or adequate conception of the magnitude of our work for their common welfare, or of the grandeur of medical science or art. For too long have we been accustomed to speak generically of the achievements of our profes-

*Annual Address to the Public and Profession, delivered before the Twenty-Eighth Annual Session of the Medical Society of Virginia, at Hot Springs, Va., August 31st, 1897.

sion, and never state in specific terms our actual accomplishments; for too long have we boasted of our successive victories over disease and death, and yet maintained an air of mystery that has obscured the glory of the triumph. This is a practical age and a practical generation. Everything is submitted to its ultimate analysis, and everything, in its results, is judged by the utilitarian standard. The world reserves its plaudits for the men of action, and prefers the dramatic deeds of the great war-lords to the silent victories of science. Witness, for instance, the present Napoleonic revival.

Sir Joseph Lister, by the discovery and application of antisepsis and asepsis, has probably saved more lives than Napoleon's ambition destroyed, and his work, unlike that of the master of "big battalions," will live after him in silent but ever-active beneficence; but what, after all, is the recognition he has received compared with what would have been his had he displayed but an infinitesimal portion of the same capacity in soldiering or in politics?

The mental vision of the public must be corrected by a better appreciation of the "realities" of things, or its moral perspective will continue to be at fault. It is your duty that the public should not only know how your profession has benefitted humanity, but who the benefactors are; and in return you should demand that honor and position be correspondingly accorded Physicians are and always have been the friends of the people; and, because of the priceless benefits through them conferred upon humanity, there should be just reciprocal relations firmly established.

I detest the scheming political doctor, but when schemers and bribers and hoodlums, "in it for what it is worth," are dictating legislation and seeking to perfect their own unscrupulous and nefarious purposes, it is high time for men who have nobler aims in life to aid in electing such law-makers as will protest against abuses and use their offices for the public good. Matters pertaining to professional progress and sanitary welfare should outweigh all considerations of strict partizanship, and our power should be felt with legislators for purposes other than those represented by monopolistic lobbies and political bosses. Legislators can be effectively influenced both by corporate action of such societies as this, and by individual appeal.

There may be those among us who may consider such action unprofessional and undignified, and that our organization gives us no right or power to go into politics; but to all such I answer: Medical societies have laid upon them the duty of protecting the public health, and that to deny or shirk such a duty is the part of cowardice and disloyalty. I saw the British Medical Association, by the united effort of its 13,000 members, defeat the Midwife bill in Parliament, when for years it had had an almost unanimous support. The work of their parliamentary committee, in eradicating abuses and in instituting reforms, illustrates what may be accomplished by men whose motives are pure and whose bravery puts their motives into action. When vicious legislation is proposed, or when salutary measures are neglected, we who are the appointed guardians of the nation's health should act, and act promptly. Silence at such times stultifies our professions and sacrifices our own self interest.

The masses of the people are honest and trustworthy, but it is not possible that a large number should be well informed upon any intricate subject. Medicine and its intelligent practice is the most abstruse of all sciences, and the public is bewildered and confused by the contention of the different schools and sects in medicine, and by those individual pretenders who vaunt their cure-alls through the religious and secular press. Consequently, the medical idol of the past is tottering to its fall, and tomorrow a new god may supersede the old. Faith wavers; nothing satisfies; nothing is steadfast or approved. "The idol of to-day pushes the hero of yesterday out of recollection and is, in turn, supplanted by his successor of to-morrow." The wholesale diffusion of medical literature has, in a sense, educated the layman, and his respect for our profession and its qualifications and requirements proportionately decreased. Likewise, the multitudinous publications of intricate and brilliant medical and surgical cases by members of our own profession have increased the difficulty of distinguishing truth from error in medicine, and has had at the same time the effect of discrediting the work and ability of many of the members of our profession, especially the country physicians, who have not a like opportunity for exploiting a tabulated statement of their hundreds of successful recoveries! Moreover, commercialism has invaded the once sacred threshold of medicine in its highest places, and newspaper reports of clinical cases and contract engagements for public professional work are expanded licenses of the new code of medical ethics. Again, there are professional promoters, who to earn their salaries and increase the number of those that support their cause, have resorted to legislative bodies as tools for their scheming. The latest sentimental and

prudish nonsense of this kind has recently emanated from the American Antivivisection Society, and their whole pretended interest in regulating vivisection is a hollow sham.

In a vague, uncertain way, the world has long known the necessity of cleanliness. For ages it had been sounded in trumpet tones to deaf ears, and yet it was not till experimental science, by means of vivisection, was able to say, "Be clean or you must surely die," that obedience was gained to this divine command. The imperative lessons of hygiene have been acquired almost wholly through the marvellous revelations of bacteriology; and now the bacteriologist is fast explaining, by a study of the life-histories of protozoa, those diseases which the study of bacteria have not hitherto adequately elucidated to many minds. Shall these new facts in regard to sanitation, and new methods of saving the healthy from disease, be hampered and impeded by these so-called Humane Societies which are seeking to imbue the minds of legislators with the idea that physicians are vampires and veritable hyenas? Shall fanaticism and ignorance triumph over knowledge?

Without the animal experiments, we should never have known how to protect the human race from tuberculosis or typhoid fever, nor would we have known of the dangers that lurk in the meat and milk of tuberculous animals. These things and many others have all been demonstrated experimentally, and, if I mistake not, bacteriology is to accomplish, in the sunset hours of this nineteenth century, much in the interest of a disease-cursed world that hath never before entered into the heart of man to conceive.

Again, there are many recent innovations in the medical ranks that are as novel as they are refreshing, many of which conspire to overthrow the dignity and influence of the profession, and lower its ancient and honorable *morale.* As a proof of this, I might mention some of the new methods of practice in vogue at present. For instance, those enthusiastic but mistaken devotees who, with a vial of serum in one hand and a hypodermic in the other, go marching up and down the world, seeking whom they may cure of every imaginable ill; or those ambitious disciples of the Healing Art who diagnose every pelvic pain as an appendicitis or a tumor, and rush madly into the abdominal cavity for fear the patient will recover without the *èclat* that a brilliant operation would establish! I might mention, also, some of the new systems of practice that have recently arisen to combat our theories, notably Christian science, which is most aptly and correctly named with two exceptions, namely, first, that it is not Christian, and, second, that it is not science; but you are too familiar with these and their laudable aims to require further elaboration. I might speak, too, of the subject which will engage your attention tomorrow—"The New Woman in Medicine"—but I dislike to anticipate your deliberations on this subject, and besides, they tell me that woman was created after man, and I know it to be a fact that she has been *after* him ever since!

It is a difficult matter, in these days of competition, to be a plain M. D., a regular old-fashioned, high toned kind of a doctor, without some extra frill or flounce, for the public seems to expect and demand that each medical claimant for their patronage shall possess some individual excellence or appendage, supposed or real. The multiplicity of drugs, the multiplicity of doctors, and the kind offices of charlatans stagger and mystify the public, and are to the disparagement of the best welfare of physician and patient alike. Like the Cornish wreckers, who hung out false lights to allure and deceive the ill-fated mariner, so do such men—few in number in our profession, though, I am thankful to say—delude the people by their false and vicious methods. I never read of their teachings nor witness their actions, that I do not wish that I were possessed of the spear of Ithuriel, that I might touch and unmask the monster.

I am told by those who have fought through the terrible carnage of a long and fierce struggle that to rest in the trenches while the enemy is advancing to the accompaniment of shot and shell, requires more fortitude by far than a mighty charge amid the clash of arms and tumult of battle; but with us, truth, and honor, and right are on our side, and victory shall yet be ours.

It may appear, at first thought, as an unnecessary and needless innovation to intrude upon such a scientific body as this a further discussion of the every-day problems of civil life in their relation to the profession of medicine, and yet I trust that some facts may be adduced which will at least cause us, as prominent members of society, to consider, to our mutual advantage, some of the socio-medical problems that appertain, in general or in particular, to us as physicians.

Modern medicine is so comprehensive, requiring as it does not only an extensive knowledge of the administration of drugs and the application of apparatus, but also of various

allied sciences, that he who chooses the medical profession as a means of livelihood usually discards all other matters and pursuits. For this reason, I take it, medical men have not devoted that attention to the civic affairs of life that their position and their worth as distinguished members of society rightfully entitle them. Medicine, I admit, is an exacting mistress, and requires of her votaries the utilization of every latent talent and energy, but in this eager pursuit after the scientific, is it not possible that we have failed in a complete professional success, in that we have unwittingly overlooked the importance of the material and practical side of our professional lives? Is the laity wholly to blame because it undertakes to manage our affairs for us? Is it to blame because we are considered as helpless babes, in swaddling clothes, in matters of public weal or finance? We are constantly complaining that our professional interests are forgotten, over-looked and neglected by the public, yet physicians themselves do not act as a unit, and do not take, as a rule, any interest whatsoever in the ordinary affairs of life. This being the case, can the politician be censured or the public, which, for the most part, is organized and managed by him, be blamed? Our own negligence in these matters has subjected our profession to more abuses and more impositions than any other with which I am conversant. I believe that the consideration of this question will be of benefit to the laity, for I am generous enough to believe that they do not understand, and consequently do not sufficiently appreciate, our professional work in all its multiform details to give us the co-operation that, as a profession, we so richly deserve. As disciples of the honorable profession that medicine is, we do not ask at their hands either practice or alms, but we do ask that the rights which are inherently ours as private citizens and professional men be accorded us.

Some of the points arising from an investigation and analysis of this matter are dependent upon a misconception of our rights not only by the people as a whole, but also in a sad dereliction of duty on the part of some of our own profession. Without further elaboration, however, they are offered as they occur to me.

The Hospital Business.—In all of the large cities there is more or less complaint in the medical profession against the latter-day method of hospital practice. While most physicians will admit that medical science has been advanced by the establishment of hospitals, yet I believe it is true that those without the pale of hospital service do not find it as easy to advance in their profession as those connected with hospitals. In order to successfully practice medicine in a city, a physician must now establish a hospital of his own, or become connected with one in its in-door or out-door service.

These methods, it must be admitted, are questionable at most, and must work hardships upon younger but deserving young men.

Some religious denominations have recently gone into the hospital business, and to sustain these religio-medical hospitals, furnishes a number of very good people with something to do, imagining at the same time that they make themselves prominent as bountiful dispersers of charity, that they are doing a service to the church; forgetful of the fact that they are depriving many young practitioners of the opportunity of making some reputation, and possibly some part of a livelihood; also forgetting that the very physicians who do their hospital work are the only individuals connected with the institution who do not receive compensation.

The trend of many of the methods employed is to place the profession of medicine upon the basis of a business enterprise, and as such to conduct it in its many details. It is a pleasure to be able to say that this problem has not been a very perplexing one yet in this State.

Dispensary Abuses.—In some of our large cities, there have been extended abuses in dispensary channels, many applying for and receiving the benefits who were well able to give remnneration for the same. Happily, in the South, such is not the usual case, for the class distinctions are so rigidly drawn in a social way, that only the deserving are usually the recipients. But it must be admitted that dispensaries have their existence by using the clinical material from which physicians, in the line of their regular work, would derive an income.

The Business of Manufacturing Chemists.—In these times, when manufacturing chemists put upon the market their preparations in convenient form and in suitable sizes, and, moreover, designate the special disease for which they are intended, and even specify the dose, it is almost needless for the laity to ever seek the advice of a physician. The simple fact that such is true requires that I draw no moral for your application.

Dispensing Pharmacists.—I think, before this audience, that I need not discuss the case of those pharmacists who intrude upon the

profession of the physician, and prescribe for disease-expressions. It is sufficient to recall the existence of such a possibility to your minds, and it is for you to determine whether or not it is to your interest to encourage or decry such individuals. For my part, I believe the intelligent pharmacist is a necessity, and I would prefer to encourage the home pharmacist to prepare all my compounds, and thus stimulate him to scientific work, instead of dealing with that class of pharmacists who are not such in spirit or education, but who are simple dispensers of rolled pills and prepared products. On the other hand, however, they should not be allowed to usurp the physician's birthright, and if they did, they should be prosecuted to the limit of the law.

Insurance Examiners' Fees.—At stated intervals, we see it announced that a reduction is to be made in the fees for insurance examinations. As is well known, a dignified firmness and protest on the part of all the doctors with reference to such a matter, would at once compel acquiescence on the part of the insurance companies; and yet, to some of the companies, it would appear that a twenty-five cent examination is regarded as reliable as a five dollar one. "*De gustibus non disputandum est.*"

Physicians' Returns of Diseases and Deaths.—As a mere suggestion, I would ask if the State, directly or through the city health departments, has the right to demand from the physicians such services as the reports of contagious diseases and deaths, without rendering compensation for the same. This duty is simply one of the numerous ones that physicians, in the generosity of their nature, have so long been accustomed to do, without remuneration, that perhaps, even to this Society, such an interrogatory may appear puerile; and yet, is it to be considered still another sacrifice for the high public good?

Expert Fees.—In this State, I repeat a fact which is familiar to you all when I say that the courts do not allow any compensation for the special knowledge required of an expert called by the State in criminal or other special cases, except a paltry per diem of fifty cents This puts the physician and his knowledge at the behest of the court, and if he accepts an expert fee opposed to the State, it renders him and his testimony liable to be brought into question and libeled by the opposing counsel. Is such a law just and equitable?

Fees in Lunacy Commissions.—As is also well known here, the fee for the examination of an alleged lunatic is only $2.50, which fee is only allowable to one physician in each case. The examination of such cases calls for the exercise of the greatest caution and judgment by the physician; otherwise, he renders himself liable to heavy punishment, by an action at law, for false commitment.

It is a well known fact that, in view of this insufficient remuneration, many of our physicians refuse to examine these cases, while others seldom or never collect the fee; for whereas the courts, in their high appreciation of the physician's opinion and expert services, only allow him $2.50, yet, for the simple signatures of two clerks to the bill, for attesting that the physician is that day "himself," it allows a further legal reduction of two fees, respectively, of fifty and thirty cents, reducing the already munificent fee of $2.50 to $1.70.

State and City License Taxes.—Virginia is one of the few States in the Union which compels the physician to pay a State and city license tax.

The State requires each practitioner to pay a license tax for the first three years, and then an arbitrary license tax based nominally on the annual professional income above $600. In addition to this taxation, many of the cities impose an additional city license and income tax; all of which, if tabulated, would stand as follows:

1st. A tax on personal property to both State and city.

2d. An income tax to the State for incomes over $600.

3d. A city license tax assessed for the privilege of practicing physic, and thereafter increased according to the income; and

4th. A State license tax based upon the number of years spent in the practice of medicine.

It is not so much of the excessive amount of this taxation that we complain as it is of the principle involved.

The city tax is purely an arbitrary one, subject to the will of the city councils, and, after it is once assessed, the physician, to have it remitted or abated, must appear before these bodies and stultify his reputation by declaring that his practice is not so large as was supposed. This I hold to be an imposition upon physicians, for they are direct agents in reducing the expenditures of State and city by giving freely of their services and supplies. Moreover, they render non-producers and consumers once more producers and self-sustaining citizens. Again, they relieve the almshouse of paupers at the same time that they protect the individuals from the odium of public pauperism.

The attitude of the State of Virginia in this respect to the medical class of her citizens is an unique one, and must be based upon some misconception of her law-makers.

Replies to letters of enquiry to six States that were chosen at random, when I was investigating this subject before the Richmond Academy of Medicine and Surgery, show that in North Carolina the State tax is $10, but the law distinctly provides that no city can impose an additional tax; in New York the tax is trifling; in Maryland there is neither State nor city tax; in Kentucky the physician has only to present his diploma and pay a fee of $2; in Pennsylvania the physician has only to pay a fee of $5 upon presentation or registration of his diploma; the State of South Carolina has no State tax, but her cities impose a tax based upon income.

The medical profession has partaken of a spirit of philanthropy which actuates no other profession, and because it is a humanitarian profession, it has been imposed upon as has no other.

Can we not meet this issue with a united front? Our material and professional interests demand it. Our humanitarianism in the past and present deserve it.

Medical Examining Boards and Medical Registration Laws.—A few years ago, medical examining boards were introduced by some of the States as a means to further guard and protect the health and lives of their citizens. Their establishment, indeed, at that time seemed a necessity, for the country, it was thought, was in danger of being overrun by a horde of ill-equipped physicians, who were supposed to prey upon the lives of unfortunate patients. Competition and rivalry among medical institutions was rife, and, the bars being let down, it is true that some physicians were admitted to pass from the portals of some of those institutions that were wholly unfitted for the proper practice of their profession. In this emergency, some of the States instituted medical examining boards, whose object was to supervise, in a sense, the output of these schools by submitting their graduates to a re-examination. The plan devised was at that time probably as effective as could have been inaugurated, but have you ever thought of the hardship imposed, after years of study, upon those poor students, simply when retaliation was intended to have been made upon the colleges instead? I am perfectly willing to admit that good has been accomplished, but did not those sagacious law-makers, even if it were at the dictation of physicians, lay hold of the wrong horn of the dilemma? Is it not just that these colleges, and not their students, should suffer? In view of the longer terms of study now required, should not existing laws be modified? Should there not be a State board rather to examine their qualifications and enforce a uniform system of entrance requirements? Or would it not be better that the English system prevail—namely, that no colleges issue diplomas, but that this duty be imposed upon a board, organized by the government for this specific purpose?

I submit that as at present conducted, these re-examinations entail hardships upon students that are not warranted by the exigencies of the case.

I speak in no manner derogatory to the present boards, nor do I speak in any representative manner, but simply as I personally feel and think upon this matter.

The medical law never presumed to protect the State, except against quacks and charlatans, and as it is now enforced by rigid academic examinations, crowded into a few hours, and given by examiners who are being constantly changed, and, moreover, who have been taught, it may be, according to different methods from those being examined, it is becoming to be a hardship, an imposition, and an injustice. In fact, I believe there is a craze upon this subject at the present time, and, without thinking, we are fast becoming tyrants in our excessive restrictions.

The minister, or the lawyer, or the law-maker does not hedge in his profession by any such barrier walls. Is it true that we are acting the part of the dog-in-the-manger from sordid, selfish greed? These professions do not require the long term of study and apprenticeship that we do, and yet, after earnest, honest effort on the part of applicants for their honors, they do not require the State's protection at last to smite them down. Why not be bold? Why not strike the deadly blow at the colleges? The spirit of progress is dominant in the land, but I say be fair, be just, and do to others as you would to yourselves. Demand higher liberal and medical education through the aid of the State, and you will accomplish better results, and in the end more surely elevate your profession.

Since the practical enforcement of this standard in New York six years ago, the State Board of Regents have declined to license for the study of medicine nearly 1,000 applicants.

I submit that, to my mind, there are many better methods than the present of solving this question to the betterment of our profession.

As to Medical Registration Laws, and the obvious necessity for interchange of license certificates between State boards, I do not feel in this presence that its discussion need claim attention. Every physician holds the same kind of a diploma, and, through State co-operation, it should mean the same thing.

I have now long craved your generous indulgence, ladies and gentlemen, and while I have taken you into the innermost circles of our professional family, and perhaps caused you to think, by my recital of some grievous, but important, family matters, that all was not what might be desired, yet there is a bright side to this picture that I would I could unfold to your admiring gaze. To others I leave that pleasant task, for I am aware that to tell these professional gentlemen of the glories and triumphs of our noble and ancient science, "born in the land of the Pharaohs, rocked in the cradle of priesthood, and nursed in the arms of humanity," would be to tell a twice-told tale, for they rejoice with me that, through their efforts, modern medicine, with her appointed angels of asepsis and antisepsis, stand at the portals of life to guide and guard and protect through all the years the handmaidens of God.

To them I appeal to continue, with a united front, their grand and glorious work in the interests of human-kind, and let the achievements of the past be only surpassed by the splendid successes of the future.

Three evenings ago, I stood upon one of the topmost crests of the Alleghanies, and while looking down into the chambers of the setting sun and watching the light of the golden shafts of the god of day playing athwart the peaks and pinnacles of that upper world, my attention was directed to two minute rivulets springing from a mountain top, and told that those tiny streams, after many miles of weary wandering, emptied the one into the Atlantic, the other into the Mexic Gulf.

Gentlemen of the profession, I trust that in your lives those two streams may never be symbolic of the scientific and practical tendencies of your profession, separate and apart, but that united and blended into one stream, they may flow through the world, bearing upon their bosom a full flood tide of blessings to suffering humanity.

200 *West Grace Street.*

ABSCESS OF THE EAR (SO-CALLED)—ITS IMPORTANCE, DANGERS, ETC.*

By JOSEPH A. WHITE, A. M., M. D., Richmond, Va.,

Professor of Diseases of the Eye and Associate Professor of Diseases of the Ear, Throat and Nose in the University College of Medicine, Richmond, Va.; Member of the American Ophthalmological Society; of the American Laryngological, Rhinological and Otological Society; Member of Amer. Med. Association, etc. etc.

The specialist in ear diseases is consulted so frequently by patients about what they denominate "abscess of the ear," that I thought a few remarks on this subject might awaken your attention and interest. "Abscess of the ear" in the mouth of a patient is a vague term covering various affections of the organ. By it, they may mean an acute or chronic trouble; there may be pain with or without discharge, or discharge with or without pain; it may be a furuncle of the external ear, an external otitis of parasitic or septic origin, or an inflammation of the middle ear with or without a perforation of the drumhead. It is a term as vague and unsatisfactory as "otorrhœa," and represents different pathological conditions, whilst the latter, which means simply a discharge from the ear, represents only a symptom. Neither term is definite enough to be used by the profession, and should be relegated to the lumber garret of other discarded and unmeaning nomenclature.

But whatever terms we apply to them, earache and discharge from the ear are both worthy of more serious consideration than most medical men give them. The dependency of such grave complications as mastoid disease, meningeal and cerebral disorders on acute and chronic suppurations of the middle ear, make this subject of great importance to all practitioners as well as specialists. I doubt if there is a physician in attendance upon this meeting who has not repeatedly treated cases of pain in the ear with or without suppuration; but how many of them have considered this a matter of any consequence? I have seen as intense suffering from so called abscess of the ear as from any affection man is subject to. I have seen profound and permanent deafness follow it, even in spite of the most skillful treatment. I have often seen its sequel, mastoid disease, and sometimes followed by death. I have seen meningitis, thrombosis of the lateral sinus, and cerebral abscess among its results, and in many cases with a fatal ter-

* Read before the Medical Society of Virginia during its Twenty-eighth Annual Session, at Hot Springs, Va., September 1, 1897.

mination. Do not these facts show it to be a matter worthy of your attention, and to be handled with your most experienced skill, and not to be passed by with such remarks as "it is nothing but an ear ache," etc, as it is so commonly done? Why, gentlemen, "only a discharge from the ear," will, in these days, disbar you from life insurance as surely as albumen in the urine, or an irregularity in the heart sounds or deposit at the apex of the lungs. Why is this, when the insurance companies are bidding against each other for every risk that is in the market? It is because so many deaths result from one cause or another traceable to neglected ear disease.

I think, therefore, you will think me justified in taking up a little of your time on such a seemingly simple topic. Pain in the ear may or may not indicate "abscess," so-called. Sometimes it is purely neuralgic in character and does not point to any pathological lesion in the ear. Sometimes it is caused by impacted wax pressing on the drumhead; and sometimes it is due to a catarrhal non suppurative process either in the soft parts of the external meatus (a furunculous inflammation), or in the lining of the drum cavity. The exact causation is only to be determined by an examination with a head mirror and ear speculum, which any practitioner can make satisfactorily, after a little experience in their use. Some information may be gained as to the parts involved by making pressure on the tragus; if this is painful, or if moving the auricle causes pain, the external meatus is usually the seat of the trouble. Furuncles in this location are exceedingly painful, especially when, as is commonly the case, there is a crop of them. Local applications are of little avail against them. Free incision to relieve tension and open the boil, hot applications and the internal use of quinine and sulphide of calcium, are the main reliance. Independent of constitutional conditions which may bring about their development, they are often caused by the irritation resulting from the improper use of ear-picks, hair-pins, etc., which people will put into their ears in spite of warnings to the contrary. The discharge in such cases is not continuous, but intermittent, and is never profuse.

Inflammation of the integument of the external ear passage is sometimes the cause of a discharge which at first may be thin and watery, with scales in it, from the drying of the secretion in the form of scales or crusts on the walls of the meatus. It may be also offensive in character. Such an inflammation is usually of parasitic origin. Itching, burning and pain may accompany it. Patients often use anything that comes handy to scratch the inside of the passage way to get relief. As the instrument used is rarely aseptic, they may infect the inflamed and denuded integument, and purulent discharge, accompanied by increased pain, may be the result.

This form of discharge can be confronted with the more serious suppuration from the middle ear, unless a proper examination is made. Time will, however, settle the diagnosis, if it is not made otherwise. Purulent discharge from the external ear rarely lasts more than a few weeks, and although an error is possible in a recent suppuration of the ear, we may safely conclude, if it has lasted as long as two months, it is from the middle ear, and that the drum membrane is perforated. In children, it is nearly always from the middle ear, as troubles of the external meatus are infrequent in childhood. In children, moreover, the pain preceding the discharge does not last long—sometimes only a few hours—as the drumhead perforates more rapidly than in adults; the younger the patient the more rapidly this occurs. Frequently, such a condition attends one of the exanthematous diseases, and you are all familiar with such an experience. The danger to these cases is not so much the occurrence of the ear complication as the neglect of the proper treatment afterwards. In adults and larger children, the pain is more lasting and more violent, and continues sometimes for weeks after perforation of the drum membrane, if the perforation is *small* and does not allow free and unimpeded drainage. Moreover, it is just such cases as these that are exposed to the danger of mastoid disease, meningitis, cerebral abscess, etc., because of the retention of the purulent discharges as a result of defective drainage—in addition to the risks of disintegration of the delicate ear tissues and caries of the osseous structures from the same cause, with consequent loss of hearing.

Chronic suppuration of the ear, which we so often encounter, is the sequel of this acute purulent inflammation, and has the same and greater complications to contend with. Drainage in such cases is often imperfect from retention of secretion, or from development of granulations or polypi, or from adhesions between the drumhead and mucous lining of the drum cavity. Caries is also frequently present, and is an important factor to consider in the treatment.

How, then, should we treat suppurative dis-

ease of the ear? Whether of the external meatus or of the middle ear, whether acute or chronic, the first principle is cleanliness best secured by antiseptic irrigation, free and unlimited. Hot bichloride solutions, 1 to 3,000, or 1 to 4,000, or formol solutions of from 1 to 5,000 to 1 to 10,000.

This in many cases might be used with a fountain syringe, but in some the water does not flow with sufficient force, and a piston or rubber ball syringe is necessary. A very convenient one is the small ball syringe sold under the name of the "Ear and Ulcer Syringe." This is rather small, it is true, but a stream can be directed from it with enough force to dislodge inspissated masses, and it has moreover the advantage of a soft pliable tip which can be placed *inside* the external meatus without injury to the parts This is essential if we would be sure of cleansing the ear. After freeing the passage in this way, the irrigation may be continued with the fountain syringe. On account of the shape of the external meatus, the auricle must be drawn *upwards*, backwards and outwards to strengthen its tube as much as possible. In babies, as the conformation is different, the direction must be *downwards*, backwards and outwards.

This syringing or irrigation should be repeated as often as may be necessary to keep the ear clean, and from a pint to a quart of the solution should be used each time to get the therapeutic effect of the heat as well as insure cleanliness. The exact temperature is that which gives most comfort to the patient.

The pain that usually ushers in the attack, before the discharge appears, is best combatted, if the patient is seen in the very inception of the trouble, by the local use of the ice-bag and the internal administration of quinine and anodynes. But the application of cold is, in my experience, of very little value after the first twenty-four hours, and should be replaced by hot applications, preferably dry heat. I find the Japanese hand-stoves very useful in such cases.* If the inflammation is in the middle ear, and the physician is familiar with the use of the ear speculum and head mirror, he should incise the drumhead if it is bulging. This gives very prompt relief by evacuating the contents of the drum, and doing away with the tension. This is more thoroughly accomplished after incision or spontaneous rupture by using Politzer's air bag, or by Velsalva's method of blowing through the Eustachian tube and middle ear, the current of air driving the fluid contents of the drum cavity through the perforation in the drumhead into the external meatus, from which they are removed by the irrigation.* It is all-important in suppuration of the middle ear to keep the drum as free from secretion as possible, and, if the opening in the drumhead is too small to insure this, it should be enlarged. The recurrent pain which is so often present in these cases, after suppuration has set in, is due to an insufficient opening which only gives exit to such secretions as are forced out by an over-accumulation in the drum, and it then closed mechanically until the inside pressure forces it open again. Unless the drainage is good, such a case, as already remarked, is exposed to the risk of mastoiditis with its attendant danger, and the possibility of meningitis or cerebral abscess. When we have secured free drainage and cleanliness by the irrigation, we must try to insure an aseptic condition of the ear passages. For this purpose peroxide of hydrogen is useful in some cases, but only when we are sure of ample drainage; otherwise the liberation of the gas in the middle ear with insufficient or obstructed outlet might produce very unpleasant complications.

The old remedy of Valsalva, an alcoholic solution of bichloride of mercury, which I first saw used by Weber-Liel in Berlin, in 1871, is very valuable—one ounce of water, two ounces of alcohol, and one-half grain of bichloride. A few drops of this are put into the ear after each irrigation. The use of powders is not advisable unless you are sufficiently expert with the ear speculum to dry the parts under illumination with cotton and probe and see that they are only lightly dusted with the powder, such as boracic acid, glutol, dermatol, or some such antiseptic. Glutol is said to liberate formaldehyde gas and insure asepsis. Powders injudiciously applied do harm not good, inasmuch as they dry in lumps, and interfere with drainage. The same thing applies to filling the ear with cotton or gauze, which does no good and may do harm. A small piece of absorbent cotton may be lodged in the depression of the auricle to catch the discharge and prevent its running on the outside, but none should be put in the meatus itself.

Constant vigilance is required in the treatment of these cases to prevent fresh infection and render all your efforts nugatory, with a resulting chronic discharge from the ear. These

*These stoves are metal boxes, with a species of punk within, which when lighted will keep the box hot several hours. They are sold by nearly all toy-shops.

*I sometimes use a very effective way of cleansing the drum by washing it out with a stream of antiseptic flint thrown through the Eustachian tube.

are especially the cases of the general practitioner. As a rule, the specialist sees but a small percentage of them until they have become chronic, unless some alarming complication presents itself. The treatment of chronic suppuration of the ear is, as far as we have gone, the same as of the acute; but in addition, we have to look out for the presence of granulations, polypi, synechiæ, caries, etc., which must be done away with before we can expect to get rid of the discharge. The same principles apply here as elsewhere as in surgery. The operative procedure depends on the nature of the case. Granulations are removed with the curette, polyps with forceps or snare, and chromic acid applications will prevent recurrence. Synechæ, adhesions of the drum membrane to the walls of the drum, especially around the edges of the opening in the membrane, should be freed. All carious bone must be removed, even including the ossicles if they are affected. Sometimes this can be done through the external meatus, sometimes we must detach the auricle and cartilaginous meatus from the bony tissues, and occasionally in addition we are obliged to open the mastoid antrum to accomplish our purpose of thoroughly removing the diseased bone. But unless this is thoroughly accomplished there is no such thing as stopping the discharge or warding off the dangers of mastoid disease and such intra-cranial complications as were mentioned in the beginning of this paper.

It is useless and merely wasting time to go into the details of these operations, as I am not addressing a body of specialists. The recent text-books on ear diseases will give you this information if you wish it. My object will have been attained without this, if I have by my few remarks led you to a more careful consideration of a somewhat neglected field in the general practitioner's domain.

It might be well, however, to call your attention to certain symptoms which may occur during either acute or chronic suppurative disease of the ear and which may give warning of the necessity of surgical interference before the resulting dangerous complications above-mentioned have advanced so far as to be beyond control. Pain behind the ear radiating towards the occiput or parietal region, redness or swelling over the mastoid, tenderness to pressure in this locality, and sudden rise of temperature are strong indications for opening the mastoid antrum, without waiting for graver signs pointing to brain complications. Sometimes the pain in the side and back of the head and the elevated temperature are misleading symptoms if the physician does not know of a previous ear trouble, and may misdirect his energies until too late. Hence he should always bear in mind the possibility of the ear being the origin of such symptoms.

200 *East Franklin Street.*

Analyses, Selections, etc.

Present Status of the Antitoxin Treatment.

Recommended by the great body of laboratory workers, endorsed by thousands of physicians both in hospital and private practice, and welcomed by the common sense of all the people at large, antitoxin has become the most widely endorsed and most generally employed of all remedies. Though confronted from the first by the fiercest opposition and materially retarded by the unbridled enthusiasm of some of its advocates, diphtheria antitoxin has, within the brief period of three years, proven itself to be specific in the full sense of that term. These are statements made by Dr. Alexander McAllister, of Camden, N. J., before the New Jersey State Medical Association in session at Atlantic City last June. In support of his claim he quotes from leading medical editorials and from recent text-books.

In connection with this we note the following from Emmett Holt's work on *Diseases of Infancy and Childhood:* "Antitoxin is a specific remedy for experimental diphtheria in animals. Experience is now sufficient to justify the statement that it is specific in man, and just in the degree in which we can fulfill the conditions which are essential in experimental diphtheria. Gratifying as were the results with the serum treatment, they have been constantly improving, and there is every reason to believe that with larger experience both in the preparation and the use of antitoxin, still better results will yet be reached. Certainly there is no remedy for any disease that has more testimony in its favor than has now diphtheria antitoxin." The doctor calls attention to the fact that the foregoing was written prior to the completion of the supplementary collective investigation on the use of antitoxin in laryngeal diphtheria made by the American Pediatric Society.

Continuing, he says it is interesting to note how many eminent medical men and prominent medical magazines, after opposing antitoxin, or treating it with stolid indifference, have joined the ranks of its advocates. The experiences of the last nine months, both in

the employment of the remedy and the collective study of results, have been such and the evidence in its favor so overwhelming, that the physician who refuses to give the remedy a place in his medical armamentarium has his motive for so doing and his sincerity immediately put in question. Every legitimate objection to the remedy is fully overcome in the employment of concentrated serums which were introduced during the spring of 1896 by Mulford Company, of Philadelphia, and which are now generally endorsed.

Regarding the opposition, it has been well said that there are, to-day, not more than three or four active opponents of the antitoxin treatment whose names were known to the profession before the introduction of the remedy. These have raised a great hue and cry, and their glaring head-lines in yellow journalism have rendered many physicians timid in the use of the remedy.

Speaking of the so-called fatalities from the use of the remedy, he recalls that every other new remedy has had similar charges made against it. He mentions as notable instances, quinine, the coal-tar derivatives, morphine, ether, chloroform, etc. He calls attention to the fact that in the early days of hypodermic medication, it was common to attribute sudden death to the use of the needle. Even to this day, some communities will not tolerate the employment of the hypodermic syringe, because of this morbid fear.

It is admitted that five deaths have followed the injection of antitoxin in a manner which cannot be satisfactorily explained. In three of these, the remedy was used for immunizing. In all these cases untoward symptoms appeared immediately upon injection of part or all of the serum, and death followed in from five to eight minutes. It is pointed out that virile germs and ptomaines, even when nurtured in an incubator, are not capable of such results in small animals, much less in a human being. The total number of antitoxin injections already made is variously placed at more than two millions. In view of this large number, the five unpleasant cases, to say the least, are not satisfactorily explained. If it be conceded that there is an element of risk in the employment of antitoxin, this must be placed at one two-thousands of one per cent., while the gain in recoveries ranges from 25 to 30 per cent. over all older treatments.—*Jour. Amer. Med. Assn.*, July 24, 1897.

Editorial.

Medical Society of Virginia.

The Twenty-eighth Annual Session, held at Hot Springs, Va., August 31, September 1 and 2, 1897, is a memorable one in the history of the Society. The Chesapeake & Ohio R. R. gave a one fare round trip rate, and supplied extra trains to convey passengers over the twenty-five miles from Covington to the Springs. The hotel accommodations were in keeping with the excellence of the place, which is one of the most excellent pleasure and health resorts in the country. The hospitality extended by Dr. H. S. Pole especially, who for many years has resided and practiced at the Hot Springs, cannot pass without recognition. All were indebted to him for providing rooms for the few pharmaceutical exhibits present. The Virginia Pharmacal Co., The Palisade Manufacturing Co., the Arlington Chemical Co., Parke, Davis & Co., etc., were among those who had representatives in attendance. The exhibitor's hall feature was, unfortunately, conspicuous in not having the display of surgical instruments, etc., usual to such occasions. There was no banquet. The attendance was about 130 doctors, and some 40 candidates for examination by the Medical Examiner's Board of Virginia. Some 40 or 50 ladies accompanied the doctors.

The session was opened without prayer or address of welcome. After the President (Dr. Geo. Ben. Johnston) called the session to order, Dr. J. Allison Hodges was introduced, and delivered the *Annual Address to the Public and Profession* [see page 327]. The Committee on Applications for Fellowship (Dr. W. D. Turner, Chairman,) reported the largest accession to the membership that the Society has had for years —nearly 70.

The Committee on Prize Essays (Drs. Wm. S. Gordon, Richmond; Robt. S. Preston, Marion; and Robt. F. Williams, Richmond,) awarded the prize of $450 to Dr. Arthur Jordan, Richmond, for the best "History of Medicine and Surgery in Virginia." Four other essays were named in the order of merit, as follows: Those by Drs. Hugh S. Cumming, U. S. Marine Hospital Service; Hugh McGuire, Alexandria; Jesse Ewell, Jr., Ruckersville; Wm. T. Walker, Lynchburg. As all essays in competition are the property of the Society, and as these four are valuable contributions, the Secretary promptly raised $250 in subscriptions, to be awarded as Society prizes in sums of $100, $75, $50 and $25, respectively, as soon as collections

are made. Later in the session, the Committee of Examination was elected an Editorial Committee, and $100 was voted out of the Society treasury to enable the Committee to meet incidental expenses that may arise in connection with their duties in compiling, from the five essays named, a *History of Medicine and Surgery in Virginia.* The Committee as yet has not had time to decide on their plan of procedure; but it is evident that a full year of hard work lies before them. We know of no other State Society in the Union that at one session has given prizes to the amount of $700. Thus, this session of the Medical Society of Virginia is made memorable by the awarding of the "Price Nash-McGuire Prize of $450," and the other prizes aggregating $250, as just explained.

We had hoped to present the Address of the President, Dr. Geo. Ben. Johnston, Richmond, in this issue, but the MS. has not been received. His subject was "The Value to the Public of State Medical Societies"

Immediately succeeding this Address, the Subject for General Discussion was taken up—*Management of the Third Stage of Labor.* Appended to the paper by the Leader, Dr. Robert Glasgow, Lexington, Va. [page 309], will be found a report of the discussion which followed.

During the afternoon session of September 1st, the following officers, etc., were elected for the ensuing year: *President*, Dr. Lewis E. Harvie, Danville; *Vice Presidents*, Drs. Lewis G. Pedigo, Crockett Springs; Alfred S. Rixey, Culpeper; and H. C. Cline, Front Royal; *Recording Secretary*, Dr. Landon B. Edwards, Richmond; *Corresponding Secretary*, Dr. John F. Winn, Richmond; *Treasurer*, Dr. Richard T. Styll, Petersburg; *Executive Committee*, same as heretofore, with Dr. Hunter McGuire, Richmond, Chairman; *Publication Committee*, same as last year, with Dr. H. M. Taylor, Chairman; *Committee on Nominations for Fellowship*, Drs. Jacob Michaux and Mark W. Peyser were elected to fill the vacancies caused by the election of Drs. Pedigo and Rixey as Vice-Presidents. Dr. William D. Turner, Fergusson's Wharf, remains chairman. Dr. Arthur Jordan, Richmond, was chosen Chairman of the *Necrological Committee.* Dr. H. E. Jones, Roanoke, was elected to *Deliver the Address to the Public and Profession* at the next annual session. The hotel at *Virginia Beach* (Princess Anne) was selected as the place for the *Annual Session of* 1898, to begin August 30th, and Dr. Wm. L. Harris, Resident Physician there, was elected *Chairman of the Committee of Arrangements.* Subject for General Discussion during the Session of 1898—*Diagnosis and Treatment of Diphtheria.* Leader, Dr. James S. Irving, of Danville. To open the discussion, Drs. E. C. Levy, Richmond, and H. G. Leigh, Jr., Petersburg.

It having been announced that unless the Governor of Virginia receives the nominations of the Medical Society of Virginia before the first of April, 1898, he will have power to appoint the Medical Examining Board of Virginia, whose present commissions, it appears, expire about November 1st, 1898, on motion, the President appointed a committee of one Fellow in attendance upon this session from each Congressional district of the State to select those who are to be commissioned under the law. At a later hour, this Committee recommended the following Fellows, whose names are to be sent in to the Governor of Virginia for commission on or before April 1st, 1898, to compose the Virginia State Board of Medical Examiners after November 1st, 1898:—State-at-Large, Drs. Rawley W. Martin, Lynchburg, and Wm. L. Robinson, Danville; *First* District, Drs. L. S. Foster, Mathews; *Second*, H. M. Nash, Norfolk; *Third*, J. E. Warriner, Brook Hill; *Fourth*, S. W. Budd, Petersburg; *Fifth*, R. S. Martin, Stuart; *Sixth*, Samuel S. Lile, Lynchburg; *Seventh*, Robert Randolph, Boyce; *Eighth*, R. M. Slaughter, Theological Seminary; *Ninth*, E. T. Brady, Chatham Hill; *Tenth*, Charles W. Rodgers, Fishersville.

During the sessions of 1895 and 1896, respectively, two female regular physicians were elected members of the Society, but after opposition—the debate in each case consuming much time. Last year, a resolution was adopted that during this session "the question as to the further admission of women to the Society as members be discussed and disposed of finally." The question was brought up, and, we trust, definitely disposed of by a vote of 77 to 11 in favor of the admission of women. Dr. Ina B. Hyde, Totaro, Brunswick county, was accordingly elected a member. The other female members are Drs. Emily C. Runyon, Richmond, and Chertsey Hopkins, Staunton.

Several Honorary Fellows were elected, including Drs. Geo. Ben. Johnston and J. S. Wellford, of Richmond, Louis McLane Tiffany, of Baltimore, W. B. De Garmo, of New York, and J. W. Bovée, of Washington.

The Legislative Committee's report was adopted recommending legislation to relieve the doctor from being compelled to disclose professional secrets; that the State license tax upon physicians be remitted; that the fees in lunacy commissions be increased sufficiently to meet the requirements of such cases; that

doctors charge a uniform fee of $5 for examinations for life insurance, except in fraternal associations; that the Society urges a national confederation of State boards of medical examiners, etc.; and that interchange of license certificates be advocated between States having laws about the same and which may have boards of about the same standard.

The Treasurer's report showed a good balance to the credit of the Society.

We present in this issue [page 317] Dr. E. C. Levy's paper on *Bacteriological Diagnosis*, with discussion. Other papers read, which will appear in order, were: "Some Characteristic Symptoms of Iritis which Help in its Differential Diagnosis," by Dr. W. H. Baker, Lynchburg; "Some Reflex Troubles Caused by Swollen Middle Turbinate Bodies," by Dr. A. C. Palmer, Richmond; "So-Called Abscess of the Ear," by Dr. Joseph A. White, Richmond; "Remarks on Summer Diarrhœa of Children," by Dr. J. A. Anderson, Danville; "Epilepsy," by Dr. A. L. Hodgdon, Baltimore; "Psoriasis, with a Case in Illustration," by Dr. Arthur Jordan, Richmond; "Rupture of the Uterus," by Honorary Fellow, Dr. George Tucker Harrison, New York; "Placenta Prævia," by Dr. Paulus A. Irving, Richmond; "Uses of Cocaine in Surgery," by Dr. J. Skelton Horseley, New York; "Plea for Earlier Diagnosis and Radical Operation for Cancer of the Uterus," by Honorary Fellow, Dr. J. Wesley Bovée, Washington, D. C.; "Ninety Hysterectomies, with Remarks on Method and Technique," by Honorary Fellow, Dr. Joseph Tabor Johnson, Washington, D. C.; "Intestinal Paresis after Abdominal Operations," by Dr. Edward McGuire, Richmond; "Mixed Group of Interesting Abdominal Cases," by Honorary Fellow, Dr. Wm. L. Robinson, Danville; "Have we Found a Radical Cure for Inguinal Hernia?" by Honorary Fellow, Dr. Wm. B. De Garmo, New York; "Substitute for Whitehead's Operation for Hæmorrhoids," by Dr. Samuel T. Earle, Baltimore; "Treatment of Angular Deformity of the Knee, with Report of Eight Cases," by Dr. A. R. Shands, Washington, D. C. A number of other papers were read by title, and will be published.

Perhaps too much time was taken up in the business affairs of the Society. This will be remedied hereafter by the reference of all such matters to Standing Business Committee.

We have undertaken only a running account of the Session, as our lack of space will not permit more. A more detailed repors will be found in the *Transactions*, which are already under printer's contract.

Practice of $2,500 For Sale for $500.

A Fellow of the Medical Society of Virginia, having a cash practice of about $2,500 a year in a Virginia town of about 3,500 refined and cultivated people, where there are only three physicians, because of contemplated removal to another State to accept an offer as surgeon to a large corporation, will sell his present position to a suitable successor for $500. He must be industrious, progressive and refined, and recognized by his State Medical Society as competent and worthy. A prompt purchaser can be given a lucrative practice, and probably some corporation positions—bringing in about $200 a year—may be transferred, not counted in above estimate of income. Offices are in a desirable portion of the town. The town is in one of the largest counties of the State. Address all inquiries at once to LOCATION, care *Va. Med. Semi-Monthly*, Richmond, Va. These will at once be forwarded to the Doctor for reply.

[Knowing the party and the place as we do, we wish to add that this is a rare opportunity for a good doctor, at remarkably small price.—*Editor.*]

Antitoxin in Tuberculosis.

The advance made by antitoxin in tuberculosis has been very important in its character. The latest report on anti-tubercle serum (Paquin) made to the American Medical Association, at its June meeting in Philadelphia, met with the most favorable concensus of opinion. Such a large number of physicians have reported recoveries by the use of this serum, or antitoxin, that it would seem to be the duty of the profession not only to use it in proper cases not too far advanced, but by all means to secure an early diagnosis. The use of serum by the rectal method avoids the slight pain due to the hypodermic needle and the occasional skin disturbance due to the same cause, and removes one of the objections heretofore existing to the use of serum. Meeting the tubercle toxin by its antitoxin, is not only rational but is now well demonstrated as being the best known method of treating tuberculosis. A most interesting review will be found in Foster's Therapeutics on the serum treatment, just published by Appleton & Co., from the pen of the learned Austin O'Malley, M. D., Ph. D., L. L. D., of Washington, D. C., endorsing the serum as the most scientific and most rational treatment known. A collective investigation regarding the use of this serum in tuberculosis would be most desirable; and we trust that such will be shortly undertaken.

Infantile Scurvy—Collective Investigation.

The American Pediatric Society is making a *Collective Investigation of Infantile Scurvy* as occurring in North America, and earnestly requests the co-operation of physicians, through their sending of reports of cases, whether these have already been published or not. No case will be used in such a way as to interfere with its subsequent publication by the observer. Blanks containing questions to be filled out will be furnished on application to any one of the committee. A final printed report of the investigation will be sent to those furnishing cases. The committee is composed of Drs. J. P. Crozier Griffith, Chairman, 123 S. 18th St., Philadelphia; William D Booker, 853 Park Ave., Baltimore; Charles G. Jennings, 457 Jefferson Ave., Detroit; Augustus Caille, 753 Madison Ave., New York city; and J. Lovett Morse, 317 Marlboro St., Boston. It is by such collective investigations that genuine progress is made; and we trust that all of our readers will give a helping hand.

Corrections in the Report of Virginia Medical Examining Board, June, 897.

Dr. Morton G. Douglas, of Warrenton, Va., calls our attention to the fact that he was put down as a non-graduate in the report given in our issue of August 13, page 267. We take great pleasure in erasing him from that list as he is a graduate in medicine from that good old school—the University of Maryland, 1895.

We had intended also to call attention to the fact that the certificate of examination by the Medical Examining Board was granted *Dr. Thomas D. Merrick*, Richmond, Va., which is not recorded in the Report of 1896 where it belongs.

The Virginia State Board of Health

Held its regular quarterly meeting at Hot Springs, Va., September 2d, 1897. Present: Drs. P. A. Irving, L B Edwards, H. M. Taylor, Richmond; V. G. Culpeper, Portsmouth; L. E. Harvie, Danville. Full report will appear in the official *Bulletin*.

The Medical Examining Board of Virginia

Held its Fall Session at Hot Springs August 31, September 1 and 2, for examination of candidates for license to practice medicine in Virginia. Most of the Board were in attendance. There were about 38 or 40 applicants for examination. Full report will appear in this journal as soon as returns are properly made to the Secretary, Dr. R. S. Martin, Stuart, Va.

Obituary Record.

Dr. Robert Madison Pulliam

Died at his home in Richmond, Va., September 5th, 1897, after an illness of about ten days, which did not seem so threatening at first. He was born in Richmond, June 11th, 1831, and received his academic education mostly from the Richmond College. He obtained his degree of Doctor of Medicine from the Medical College of Virginia in 1855. For several years his health could scarcely be called good, and he practiced his profession in Chesterfield Co., Va., until after the War, when he returned to Richmond. For several years, until 1874, he was lecturer on Anatomy in the Medical College of Virginia—his health then calling on him to take a rest. He remained, however, in active practice until his fatal sickness. He was one of the original members of the Medical Society of Virginia—taking active interest in its organization in 1870, which continued until his death. He was an active church worker, and a member of several beneficial orders, and was always active in well doing. His funeral services were held at Centenary Methodist church, South, and his remains were buried in Hollywood.

Dr. John H. Bemiss,

Of New Orleans, La., died of yellow fever September 5th, 1897. Such is the intelligence by newspaper report as we go to press. Following the footsteps of his illustrious father, Dr. S. M. Bemiss, who died several years ago, Dr. John H. Bemiss was an active worker in the profession, and greatly helped to give renown to many of the distinguished doctors of Louisiana. At the time of his death, he was nearly 50 years of age. He was a graduate of the Medical Department of Tulane University of Louisiana, 1878. For years, he was President of the Faculty, and Professor of the chair of Physical Diagnosis in the New Orleans Polyclinic, which institution he labored hard to establish. He was an worker in his State and Parish Medical active Societies, and contributed numerous papers to their sessions. Besides being one of the Visiting Physicians to the great Charity Hospital of New Orleans, he was a member of Charity Hospital Alumni Association of Louisiaua. His death will be long felt as a great loss to his State, as indeed it will be recognized, especially throughout the South.

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Original Communications.

MANAGEMENT OF THE THIRD STAGE OF LABOR.*

By JOHN HERBERT CLAIBORNE, A. M., M. D.,

Petersburg, Va.

Ex-President and Honorary Fellow of the Medical Society of Virginia.

By the "third stage of labor," we understand that process or those processes which occur between the birth of the child and the extrusion of the secundines—the placenta and membranes—processes which may bring more peril to the patient than occur at any other time of parturition, and which promise more trouble and give more cause of apprehension to the physician. The patient, in blissful ignorance of everything except that her pain is over, and her babe is born, is profuse in her grateful acknowledgments to God and the doctor, whilst the nurse and the wearied friends who have been helping her, as they suppose, by their nameless little offices of sympathy, all suddenly lose their heads and fly around, publishing to all within hearing: "It is all over—the child is born." "All is well."

But the doctor. What of him? If he be a man of sensibility and a man of many experiences, he will scarcely yet divide their joy. He will know of the dangers which yet environ his patient, and that this is the time of all others, when his skill may most be needed—a time of watching and of anxiety, a time "when even the elect may be deceived;" and sitting with his hand upon the womb, and watching for the red flag of danger, will live in twenty minutes a lifetime of anxious solicitude.

But what are the dangers so much to be dreaded at this particular time? The act of labor is a perfectly physiological process, and nature is, or ought to be, equal to any demands made of her in the act of the propagation of life. And doubtless nature would be equal to any emergency that might arise amongst her own healthy children. But when art and indulgence and unsanitary habits in dress and in social customs have broken her wise laws and despised her honest requirements, nature repudiates her province in parturition.

And in the high civilization of this closing century, we may look for and we shall surely find complication and disaster in child-birth that "only the fittest can survive." It is in this third stage of labor especially, when the mother has just given life to a new being, that she encounters danger of losing her own, which it requires all the skill of the physician and all the resources of art to prevent.

But what are these dangers? Immediate dangers?

First. Hæmorrhage—post-partum hæmorrhage, as it is called.

Second. Retained placenta.

Third. Adherent placenta.

Fourth. Entrance of air into the open mouths of the vessels from which the placenta has been detached. This entails sudden death, or commonly what has been called "inexplicable death, immediately after delivery."

It is important, therefore, that we study this stage of labor in which such accidents are liable to occur, and to be ready to meet them or to prevent them, if possible.

Post partum hæmorrhage usually comes on suddenly in from ten minutes to one hour after the birth of the baby, and comes with a gush, flooding the bed, and sometimes the floor, and blanching the cheek of patient and doctor as well. Or it may come insidiously, filling the enlarged and empty womb by degrees, and giving no sign until the pallor of the patient, the thready pulse, the restlessness, and the sighing of the poor woman give token that trouble is on hand. In either case, one must act with great promptness, and passing the right hand into the womb, remove whatever of clots or secundines may remain

* This paper was read by title as a part of the "Discussion of the Subject Selected for General Discussion," during the Twenty-eighth Annual Session of the Medical Society of Virginia, at Hot Springs, Va., Sept. 1st, 1897.

there, at the same time kneading the womb through the abdominal muscles with the left, and syringing out the organ with iced water or iced vinegar, or hot water or hot vinegar, as soon as either can be gotten. For this reason, on account of the danger of such an accident, the accoucheur should never go into a case of labor without a good syringe at hand, a supply of vinegar, which can be fonud in almost any family, and ice or hot water convenient. Life may be lost whilst waiting to hunt up any of these indispensable articles. As soon as he can command the use of his hands, he should inject half drachm of ergotole or fluid extract ergot in the hypogastric region, and place a chair under the foot of the bed, thus elevating the feet and depressing the head. To this may be added, in desperate cases, compression of the abdominal aorta.

But as the occurrence of hæmorrhage, as well as the accident of the absorption of air into the open mouths of the uterine vessels, may be, and sometimes undoubtedly is, connected with the *Treatment of the Placenta*, this becomes one of the most important processes in the third stage of labor, and requires especial notice.

And the first question that arises is, *When* should the placenta be removed? Certainly not within twenty minutes after the birth of the child, unless post partum hæmorrhage, or some other complication, requires instant interference, and delivery. This delay gives the mother opportunity to recover from the shock of the last throes of labor, and from the exhaustion incident to her condition; and secures her co-operation in the efforts of nature to complete the delivery, or in the offices of the doctor, who may have to complete it for her. It will also give to the uterus some time to re-gather its contractile power, and thus help to re-close the mouths of the vessels left open by the separation of the after-birth; and give opportunity also for the formation of clots in the sinuses, whose functions of circulation have ceased. I have often seen cases in which the hasty removal of the placenta was responsible for a subsequent hæmorrhage, or for the detention in the womb of portions of the secundines, that afterwards led to septic results.

If after the expiration of twenty minutes the placenta has not been expelled by natural means, then it may be removed by the doctor. But if during that time the hand has retained its hold upon the womb, above the pubis (and it should never be taken off until labor is complete), and gentle manipulation be kept up, nature will ordinarily be equal to the completion of the labor.

If this should not occur, then *how* should the placenta be removed? By expression? According to the method advised by Credé, and other authorities on obstetrics? That is, by taking the uterus in the hollow of the left hand, and forcing the fundus down, and backwards, with strong pressure into the pelvis. A recent and accepted authority says that, "if this manœuvre be properly carried out, and sufficiently firm pressure be made in the right direction, the uterus may always be made to expel the placenta into the bed, with the coagula from its cavity." And adds, that "to the one who has acquired the knack of this procedure, the bugbear of retained placenta will cease to be a dread." I regret to confess that I have never acquired this knack. It has always seemed to me that a force sufficiently powerful, when applied to the fundus to push it down into the pelvis, and to squeeze its contents out, might inflict serious hurt on that organ, and even cause inversion of the same.

Retained Placenta.—Speaking from my own experience—and I trust I shall be pardoned for obtruding my own methods upon the notice of the Fellows, when I remind them that my experience in the practice of obstetrics will at a very early day extend to one half a century—when I find after twenty minutes of waiting from the birth of the child, the placenta is not delivered, by the ordinary means of gentle manipulation of the womb, then with my left hand still on that organ, I pass my right hand, or at first, only a finger in the vagina, to see if the placenta be not simply detained in the pelvis, or partially in the womb and partially in the pelvis. If this be the case, it can easily be removed by a little manipulation.

If it be within the womb, then, under strictly antiseptic precautions, I pass my hand into the womb, and provided there be no hour-glass contraction, and no adherent placenta, the task of delivery is comparatively easy. Having gotten in the womb, we are told that we should never withdraw the hand until we have gotten possession of the object of our research; and should bring it back with us. But in certain cases of hour glass contraction, we sometimes find it difficult to liberate the hand, or to withdraw it with, or without the object of our research. Recently, in the case of a sturdy young primipara, I was fully ten minutes in extricating myself, according to the time of a doctor present, though it seemed much longer to me. However, in such cases, generally both hands, and secundines may, with a little patience, be easily withdrawn.

In case of Adherent Placenta, it is quite a differ-

ent matter. We are told in the books that we should introduce the hand, and, peeling off the placenta, as one would peel an orange, proceed as before. This seems to be a very simple procedure, but in practice I have never found it so. I have seen five cases of adherent placenta in forty-eight years of practice, but in one only could I peel off the placenta as an orange is peeled. In three of the others a portion of the placenta could be peeled, or rather pulled off, whilst in the fourth no part of it could be detached. This patient, with one from whom we could only get a portion, about one third of the after-birth, died of septic fever in about five or six days. They lived in the country, and could not receive prompt or efficient attention. The other cases recovered without a bad symptom.

But, now supposing, as in complicated cases, the woman to have been cleanly delivered, on examination no portion of the secundines retained, what next? The *binder*. This should be made of stout soft muslin, and should extend from the os pubis to the ensiform cartilage, and should be gored at the hips to secure a fit. Only in very thin persons do I think it important to place a pad over the womb. This may be made of a towel, folded several times upon itself; but this pad, in my experience, interferes, to an extent, with the examination of the uterus through the abdominal walls, and may help to mask a concealed hæmorrhage. In stout, well-conditioned young women, I doubt if the binder be necessary; but in all cases it gives some support to the relaxed muscles, and is popularly supposed to prevent too much enlargement of the figure after recovery. I have never satisfied myself that such was its effect. The change in figure, after parturition, will depend more upon the form of the patient than upon the results of the binder.

Before the application of the binder it is important, lest it should be soiled at once, that all the clothes which had been placed under the patient to receive the discharges should be removed, and that she should be well wiped off with an antiseptic wash. I prefer the bichloride, and then a sterilized pad should be placed to the vulva. As soon as these offices have been finished, I administer one drachm or half drachm of ergotole or fld. ext. ergot. This may serve to secure contraction of the womb, and to prevent the accumulation of clots. The patient may then be left to rest, and the doctor, if he pleases, may leave the room, but not the house. In no case, I think, should a physician leave the parturient for one hour after delivery, and not then until he has satisfied himself of the condition of the uterus and of the pulse. No woman can be safely left until the womb is well contracted and the pulse under 100 and is steady and regular. He should also satisfy himself that no unusual flow is occurring, by personal inspection of the pudendal pad or cloth. The womb may be well contracted, and yet there may be hæmorrhage from the lacerated os or torn perineum, which requires attention.

I rarely administer an opiate for some hours after delivery, teaching the patient to believe that the first after pains are safety-pains; that they are the result of uterine contraction, and will help to secure her from hæmorrhage and from the accumulation of clots in the womb.

THE PRESENT POSITION AND NEEDS OF PATHOLOGY.*

By CHARLES MINOR BLACKFORD, JR., M. D.,
Atlanta, Ga.,

Instructor in Normal and Pathological Histology, and Lecturer on General Pathology in the Atlanta Medical College, etc.

During the progress of a campaign, or even during a single battle, it is impossible for a soldier below the rank of a general to know whether a victory is being won or a defeat received. To the private, little difference is distinguished between an engagement that will figure in the reports as a skirmish and one that may be well-nigh decisive; between a halt for rest and one due to the overwhelming force of the enemy. To his eye the feigned retreat of strategy is the same as the forced retirement of defeat, and it is only by comparing reports from all over the field and contrasting the condition of affairs at the beginning and at the end of a season, that an accurate idea can be had as to the degree to which victory or the reverse has prevailed. Even then it may require the "vista of time" to bring things into their true relation and perspective. We know to-day that the fall of the Napoleonic empire began at Moscow, and that the doom of the Confederacy was sealed at Gettysburg, but their vital importance was not apparent at the time the events themselves occurred. It is the same in the ceaseless struggle with ignorance. In the routine of daily work in any science, it is hard for a single worker to know what progress is being made; he sees but the rifle-pit in which his individual struggle goes on, and from time to time it is necessary for him to

* Read by title before the Medical Society of Virginia in Session at Hot Springs, Va., September 1, 1897.

review the whole field to see wherein he is strong and where weak; to discover his errors in method or in fact, and, perchance, to renew his flagging courage by the sight of a victory on some adjacent line.

The adventurer who seeks the summit of some precipitous mountain is disheartened when, after climbing painfully and wearily to what appeared to be the crest, he finds his true goal as far away as when he began; but if he turn his gaze to the valley and see the cliffs he has scaled, the dizzy heights whose verge he has skirted, the difficulties overcome, he returns to his task with renewed energies and fresh vigor. When the study of disease seems hopeless, and we stand discouraged and bewildered by the maze before us, it is inspiring to look over the path already trod and note how much has been accomplished.

Pathology is the youngest of sciences, for until the latter half of the present century it cannot be said to have existed at all. In company with astronomy and chemistry, it has been forced to struggle against superstition and bigotry from its very inception, and, owing to the inherent difficulties of the subject, its struggle has been more protracted than that of either of its sisters. It is not so susceptible of demonstration; its study requires years of special training before the few ill-defined laws that have been elaborated can be understood, and, unfortunately, in many parts of the world it is still so intertwined with religious dogmas, that its teachings are but partially received. It is painful to reflect that the enforcement of sanitary laws was one of the causes of the Sepoy rebellion, that scarcely five years ago efforts to stay the cholera caused riots in Tashkend, one of the chief cities of Turkestan; nay, more, that while we celebrated the triumphs of our civilization in Chicago, State troops kept guard over a quarantine station in New York Bay. During the Civil War, more than 61 per cent. of the deaths among the Federal soldiers were from diseases that we now know are preventable, whereas but 14 per cent. were killed in battle. Nothing is done by the nations of civilization to prevent the annual outbreak of plague and pestilence that follows the pilgrimage to Mecca and the drinking of the sacred cess-pool of Zem-zem, because of the revenge that would be taken by the Mohammedan hordes for any interference with their belief Such things occurred prior to the sixteenth century, and we of to-day laugh at such ignorance and folly, but when they occur as they do amongst us of to-day, we merely mutter something about freedom of opinion, and make no protest against the reproach of our age and profession.

But despite these spots, much has been done, and the purpose of this paper is to mention some of these achievements, especially in the line of the special study of the writer, to state our present position as regards some of the many problems that perplex us, and to indicate a few of the problems and needs of the future.

If we follow Kant's definition, pathology is not a science, as it cannot be reduced to mathematical expression; but in this it has so many companions—morphology, biology, philology, anthropology, and others being in the same category—that the definition may be rejected. In its full sense, pathology embraces all that is known about disease, its etiology, symptoms, diagnosis, prognosis and treatment, but of late years it has been restricted to a consideration of the etiology, effects, diagnosis and modes of prevention. Even this scope is being narrowed, and the pathologist of the future will be confined to the etiology and the changes found in the body as the result of disease. He will prepare the ground for the sanitarian who studies prevention and the therapeutist who studies treatment, and will himself receive his data from the experimental physiologist. From him the pathologist will learn the actions of the body in health and as affected by various agents, and by his own research he learns the influence of disease, and from these varied sources comes the knowledge necessary for a rational treatment. True, as in vaccination, a lucky chance may sometimes put a means of prevention of cure in advance of pathology, but in such a case the agent used is purely empirical until slow moving pathology explains its *modus operandi.*

In the light of to-day it is almost impossible to realize the condition of the world at the close of the Napoleonic wars No material advance had been made since the seventeenth century. The great universities gave instruction only in Latin, Greek and elementary mathematics; chemistry was making slow headway; physics consisted of a number of entertaining experiments of which no application was made. In the delightful autobiography lately discovered,* Justus v. Liebig quotes the reasoning in vogue during his college days: "The moon evidently subdues thunder, for if the moon appears during a storm at night, the clouds pass away and the thunder ceases." The idea that the passing of the storm permitted the moon to be seen, does not appear to have occurred to the lecturer.

* Smithsonian Reports, 1891.

With the renaissance that began in earnest about 1850, science, as we know it to day, came into being, and we may take pride in the fact that our branch was among the earliest to feel the new inspiration. The discovery of bacilli in the blood of sheep suffering from anthrax was announced by Devraine in 1892, and although the significance of this discovery was not apparent at the time, it was about to bear wonderful fruit.

Sociologists have often called attention to the fact that when a crisis arises, a group of great men is found ready to meet it. Washington, Jefferson, Franklin, Hancock, Marshall and others made a wonderful galaxy in '76, and the perilous times of the founding of the United States, Lee, Jackson, Lincoln and Grant arose at the time of our Civil War; Pitt, Fox and Canning, with their fellows, guided Great Britain through the dangers of the French Revolution and the Napoleonic era, and when in the fulness of time, Germany was to unite, the "Old Kaiser" found von Molkte to lead his armies and Bismarck to rule his State. In intellectual crises it has been the same. A French chemist investigated the art of brewing, and discovered the cause of the different kinds of fermentation to be the growth of different kinds of vegetable organisms in the fermentable liquid. Acting on the hint thus dropped by Pasteur, Robert Koch cultivated the bacilli of anthrax and tuberculosis artificially,* and then by inoculation, showed the relation of the micro-organisms to their respective diseases Lister, the third great leader of this period, took up the strain, and demonstrated that wound infection might be prevented by excluding the bacteria or killing such as gained admittance.

This was the first great triumph of pathology, but so often has the story been told that it is needless to repeat it. The careful experiments, the rigid logic, and the precision of the observations, are in themselves matters of pride; but more than all, may we be proud of the saving of life that has followed antiseptic surgery and the adoption of antiseptic methods to other than surgical purposes. After the causes of the first two diseases had been determined, it was easy to pass to others, and several have since been added to the list, a list that is constantly growing, but the discovery of the living agent is merely the first step—its *modus operandi* must then be found.

Each year that passes shows more clearly the interdependence of the several branches of science, and its essential unity. From a chemist came the hint that founded bacteriology, and from chemistry came also the next step. Brieger, of Berlin, and a number of other European chemists, isolated a number of poisonous substances from putrescent materials, and by determining the chemical formulæ of them, showed that they were definite compounds. Vaughn, of Ann Arbor, obtained from ice-cream, cheese and other milk products, a highly poisonous compound called tyrotoxicon, and by the discovery of these "alkaloids of decomposition" the pathology of the bacterial diseases is completed. For example, from cultures of the bacillus tetanus it is possible to extract four alkaloids as well defined as strychnine and morphia, that are capable when injected together in an animal of producing every symptom of the disease. These ptomaines are produced by the life action of the minute plants, just as more familiar alkaloids are by the poppy or nux vomica. In this way we have obtained a clear insight into the true pathogenic process of many of the infectious diseases, and the problem now rests with the therapeutists.*

In a paper presented at the last meeting of this Society,† the history of serum therapy and an explanation of the physiological basis on which it rests, was given in full. It is, therefore, unnecessary to repeat it here, but the success claimed for the method in that paper was brilliantly demonstrated during the outbreak of bubonic plague last winter. Wherever the serum was employed the disease was checked, and to it as much as to the thorough sanitation that was enforced in the plague stricken district do we owe the comparatively limited spread of this horrible malady.

Biology is the offspring of organic chemistry, and now, in turn, it is to biology that pathology is looking hopefully. In 1859, appeared the "Origin of Species," followed in 1871 by its corollary, "The Descent of Man." The startling hypothesis of Mr. Darwin called attention to biology as nothing else would have done, and prepared men's minds for the results of the deep sea soundings of Brooke and Maury in this country and of the "Challenger" expedition abroad. These soundings brought from the abyssmal depths of the ocean many unknown species of organisms, and among them many of the protozoa. As the name implies,

* Those interested in the history of these classic experiments, can find an excellent account of them in Tyndall's essays on "Fermentation and Its Relation to Disease," and on the "Origin, Propagation and Prevention of Phthisis."

*See McGuire Prize Essay on *Tetanus*. Trans. Med. Soc. Va., 1892.

†McGuire Prize Essay on *Serum Therapy*. Trans. Med. Soc. Va., 1896.

these are the beginnings of life—tiny specks consisting of but a bit of protoplasm. So low, indeed, do they stand in the scale of life that Mr. Huxley, the foremost biologist of his day, made his famous mistake of ascribing life to an inorganic substance which he called the bathybios, and which he asserted to be inorganic matter in the very act of becoming organized. In this he was shown to be in error, and, conscientious as he ever was, he promptly admitted it, and became a champion of the doctrine of biogenesis. The study given these protozoa showed the likeness between them and the leucocytes, a likeness that is particularly striking in the case of the amœba. The white blood cells then became known as "indifferent" cells, as indicating their lack of differentiation. It was seen that the only essential difference between the protozoa and the higher organisms lies in the degree to which the cells of the latter are changed and modified—differentiated as it is called—to perform certain functions. In an amœba, the single cell moves, digests, responds to stimuli, etc.; though being a jack-of-all-trades, it is master of none and does all badly. Go up but a single step to the Gastrula, and it is found to be composed of two cells, and that these differ slightly from one another, so that the inner will digest slightly better than the outer and the outer is a little tougher than the inner. So slight is this difference that we may invert the organism and the cells will change functions. We see a similar change in character and function in cases where, on account of deformity or disease, a mucous membrane, for example, is exposed, and changes its texture to adapt itself to its altered environment.

The study of the development and reproduction of the amœba led at once to embryology and the formation of differentiated tissues. From this, it was seen that anomalies* of all sorts are formed in accordance with laws; that, to use Hæckel's famous expression, in the development of the individual is epitomized the development of the genus, for Nature has no "freaks." Malformations that puzzled earlier students are now explicable as errors of development, atavism, or perhaps foreshadowings of what will be the normal type in the future. As yet we have but brushed the surface; we do not know why these errors occur, nor do we know the laws of heredity. Weismann's hypothesis, that the nuclear chromatin is the substance that transmits hereditary traits, leaves so many "residual phenomena" unexplained that, at best, it needs further proof, and, from its very nature, the hypothesis hardly seems demonstrable. Fleming, the Hertwigs, van Beneden, Morris,* and others, have done wonderful work on the structure and development of the cell, and the solution of the problem may be nearer than we think at present.

A result of studying development is the knowledge thereby obtained of degeneration. As there are no chance formations in the upward line, so are there none in the downward one, and degenerative forms, whether of a single cell or of an entire individual, are as regular as are the developmental ones.

This latter statement needs some qualification, or at least some explanation. As a corollary of the doctrine of evolution comes the doctrine of degeneration, just as the descent is a necessary sequence of the ascent of a mountain, but frequently it is impracticable to come down by the same path used in going up. Thus it is in pathology. Embryology in the higher animals, and normal conditions in the lower and in fossil ones, have taught us the steps of the ascent, but many of the degenerative stages are not yet known. By analogy we argue that, as development proceeds in regular stages, degeneration must do the same, but at this point we must pause. Why tissues take different forms of degeneration we do not know. What the significance and etiology of the cheesy degeneration of tuberculosis, of amyloid, colloid, atheromatous or fatty degeneration, is as yet beyond our ken. The most probable suggestion is that some obscure chemical process underlies the phenomena.

Ever since pathology existed, it and physiology have kept even pace and contributed to one another. The physiological discoveries of Horsley, Jackson, Broca and many others may be claimed by pathology, as these great investigators were studying diseases of the nervous system and made their physiological discoveries incidentally. Constantly finding certain definitely located lesions associated with definite disturbances of function, the deduction was irresistible that the injured or diseased organ performed the functions so disturbed, or were necessary for their performance. If one has a chime of bells rung by a series of batteries, and it is noticed that when a certain battery is out of order a certain bell is silent, no high logical power is needed to trace a connection between the two. But the same symptom, the silence of the bell, may be due to a broken wire or a defect in the bell as well as to a de-

*See "The Significance of Human Anomalies," by F. J. Shepherd, M. D., *Pop. Science Monthly*, October, 1884.

*See Morris (Charles) on the "Structure and Division of the Organic Cell," *Pop. Science Monthly*, 1884.

rangement of the battery, and high powers of observation and reasoning, joined to ingenuity in experiment, may be needful to determine in a given case where the lesion lies. In neuropathology we have the same condition. The functions of the brain and cord are yet imperfectly known, and many of our most important diagnostic symptoms are not understood at all. Optic neuritis and "choked disk" is a veritable diagnostic light-house in cerebral tumors, but its cause, and the relation between an intracranial neoplasm and inflammation of the optic nerve is to a great extent a mystery.

The size of the book needful to contain our ignorance is proverbial, and as every student is prone to linger on the bounds of the unknown, this paper would be interminable were I to attempt to state our ignorances in full. Pathology may vaunt itself, however, on its progress in nervous diseases when it be remembered that less than forty years have passed since the whole subject was a blank. Many of you who would resent being called old men may readily remember when typhoid was called "nervous" fever, or when tetanus was thought to be due to a wounded nerve, and perhaps a majority of our members were taught the old classification of the cranial nerves, in which function was ignored and all nerves that chanced to use the same foramen were considered the same—a reasoning as sound as to regard food and air as the same because both enter the body by the same opening.

Nine years ago the writer had the honor to present to this Society a report on the Advances in Physiology.* In that paper two new blood corpuscles were described as having been established by the researches of Hayem, Bizzozero, and others, but they were only accepted after long discussion. At that time every histologist considered the white cells as uniform—as "indifferent" cells only—but to day it is known that these white cells differ widely in source, in reaction to coloring matters, and in function. These differences are too new, *i. e.*, of too recent discovery, for a full comprehension of their significance, but it seems likely that some light will be cast on the anæmic conditions, such as pernicious anæmia, leuchæmia and the like, by more exhaustive investigations in this direction. Until the source, function and mode of development of these white cells is thoroughly understood, our knowledge of development and degeneration will be defective.

The discussion of development and degeneration leads naturally to the most unsatisfactory part of modern pathology—that which concerns the malignant neoplasms. For the sake of simplicity, I will consider as malignant all of those tumors grouped under the names of sarcomata and carcinomata, ignoring all subdivisions of these classes, for it seems to be the first object of every pathologist to make a new classification of these terrible growths. All are agreed that the characteristic formation of the sarcomata is that of "embryonic connective tissue" and of the carcinomata, an atypical form of epithelial tissue, but there we stop. This, as is apparent to all, is no explanation at all. The Whartonion jelly, the vitreous humor of the eye, and myxomatous tissue, all belong to the embryonal type, the first belonging to a certain stage of fœtal life, the second being normal throughout life, and the third being a result of a degeneration following a disturbance of function in the thyroid, but none of these produce the symptoms of sarcoma. It is safe to say that nothing humiliates the pathologist so much as do the malignant neoplasms. The utmost refinements of the histological art, the finest and most powerful objectives that opticians can produce, and every staining reagent that organic chemistry can suggest, have been used in vain to discover the clue to these hopeless disorders. It is asserted from time to time that inoculation experiments have succeeded, and this, aided by the fact that some cases treated with pyoktanin or some antitoxic serum have apparently improved, gives weight to the view that they are infective. In what lies their communicability, in what lies their malignancy, is, however, still unknown. So far as we know at present, there is nothing in the histological structure of either group to explain their action, and in all probability the future will reveal that, like tuberculosis and syphilis, they are but local manifestations of some general disorder, perhaps some general infection.* Many, if not most, of the members of this Society will remember the days when pathological histologists sought some peculiar cell as characteristic of tubercle, but the discovery of the bacillus at once explained the whole course of the disease. Of late years, the amount of tissue removed in operations for cancer has steadily increased, and it is claimed that the number of recurrences has diminished. Time is too short as yet to be assured of this latter fact; but if it be true, it is another point of resemblance to tubercular disease, for we

*Transactions Med. Soc. Va., 1888.

*Those interested in this matter are referred to the writer's article on "The Malignant Factor in Tumors," *Virginia Medical Semi-Monthly*, April 9, 1897.

know that all of the infected material must be removed if there is to be any hope of recovery. In tuberculosis, there is the ever present chance of re-infection, a probability that is increased by the previous attack, and care should be exercised to discriminate between recurrence and re-infection. The same may hold in cases of malignant growths, for many cases recorded as recurrence may in fact be re-infection.

Time does not permit mention of the many other problems that confront us. The so-called functional disorders of the central and peripheral nervous systems, the trophic disorders, such as rickets, osteo-malacia, scurvy, and the like, and many others. The task is so vast and the technical difficulties surrounding the investigation of many diseases so great that, to any but working pathologists, the progress made in determining the exact nature of the morbid process seems small indeed. Not merely have these inherent difficulties to be overcome, but obstacles stand in the path that may be removed, and a passing notice must be given to some of the needs of pathology at present.

Chief amongst these stands the lack of suitable endowments for research. In this country and in England, there have been few bequests made for aiding pathological study. Should an expedition be proposed for exploration in the frozen regions of the poles, public and private funds are freely poured out, although such investigations are of no practical and of little scientific value to mankind. We can but look with envy on the sums provided for the various polar expeditions in this century alone, and when we contrast the results attained by the whole list of polar explorers combined, with the benefits that have sprung from antiseptic surgery alone, it seems strange that so much should have been given for the exploration of these barren wastes of ice and so little for the preservation of our race from disease A few of our colleges have well equipped laboratories, but that is not all that is needful. Not merely is the conduct of a laboratory attended with expense, but so absorbing is the work that a pathologist has no time for "gainful pursuits." Literally, he "has no time to make money," and his chair should be sufficiently endowed to afford him an ample support. In the United States alone there are a large number of astronomical observatories, with magnificent equipment and ample funds to support the observers while engaged in resolving nebulæ and determining the orbits of comets. Of course, many lives are saved by the discovery of a new comet or by determining whether Saturn has really three rings or if the third be an optical delusion; we recognize the untold value of resolving the double stars and of knowing how long it takes for one of them to revolve about the other; but may not even these vital questions wait awhile and allow some of the money spent in this way to go towards saving the human race from epidemics, or in finding some way to stay tuberculosis, from which one-seventh of the human race perishes? Is not this last as important as for us to know how far north Franz Joseph Land extends, or whether there be frozen land or frozen water about the poles?

The next great need of pathology is the direct off-spring of the first. It is the need of workers. A trained and cultivated mind is needed to do original work, a mind stored with all attainable scientific knowledge, and trained to reason from the known to the unknown. The scanty rewards promised by pathology attracts but few of the men whom she needs, and as a consequence, those few are overworked. The harvest indeed is great, but the laborers are few, and few they will continue until some of the munificent endowments bestowed on the other sciences fall on ours.

But pathology has confronting it, a danger that has passed away from every other science. Professor Andrew D. White has lately given us a history of "The Warfare of Science," in which, he has told plainly and simply, the story of the army of martyrs to scientific truth, and his record is one that may well make us blush for humanity. It is true, that we no longer have to fear the stake and rack in investigating nature, but though life and limb are safe, the same spirit survives in other forms. A number of persons, whom, for the sake of our civilization, we will assume to be well intended, are striving in many ways to oppose freedom of thought as much now as in the fifteenth century. They lay great emphasis on the commandment, "Thou shalt not kill," but ignore, "Are ye not worth many sparrows?" Assuming a number of facts that they are unable to prove, they endeavor to make those whose lives are devoted to saving life and relieving pain appear the most cruel of wretches. Never having seen the interior of a laboratory, they erect an imaginary one, and coolly assert that the scenes that their own imaginations have conjured up, go on in them, and at their meetings vote resolutions condemning physiologists for attempting to save life, and Legislatures for forbidding the wearing of our song birds on their hats. In our climate, there are not five days in as many years that it is necessary to

wear furs for shelter from cold, yet two of the greatest nations of the world have been on the brink of war for some years past, and a harmless and beautiful race of animals have been well-nigh exterminated to supply what is purely an article of vanity and luxury. To supply the "aigrettes" worn on woman's bonnets, female herons have to be killed at a time when the death of the mother means the death of her brood, and yet when a British Humane Society appealed to the leader of the British fashionable world to give up this senseless and cruel ornament, it met an abrupt refusal. Similarly, the American bison has been exterminated to gratify vanity; the same fate awaits the elephant; and, I will venture to say, the pain endured by geese to supply the "live goose feathers," and by horses in having their tails docked and in wearing the "kimble-jack"—both thoroughly useless affectations of fashion—is greater than that endured by any animals in a laboratory. In this latter case, not merely do the horses have to endure, *without an anæsthetic*, cutting through a highly nervous part, but they are rendered defenceless from the attacks of flies and other insects by the loss of nature's weapon, and are forced to drag heavy vehicles at high speed with the head held in an unnatural position by a rough bit in the tender mouth. We can picture the member of anti-vivisection societies driving to their meeting with horses so mutilated, removing their seal-skin coats and aigretted bonnets, and denouncing attempts to find a cure for diphtheria.

> "Oh, wad some power the gie' to gie' us
> To see oursells as ithers see us."

Time forces me to bring this paper, already too long, to an end; but, in closing it, let me urge each and every one of you to study this branch of our profession more fully and carefully. It is impossible for those who have large practices to become practical pathologists, but each of you encounter interesting conditions and remarkable pathological states among your cases. Let me urge you to perform more autopsies. When you have a case that has puzzled you, and in which you are in doubt as to what is really the matter, if possible obtain an autopsy, for the experience of any one man is small, and our science can only advance by enlisting the aid of those whose interest lies in treatment as well as those who study the diseased condition. If a neoplasm be removed by any of you, let me urge you to send it to your nearest pathologist, whether he be in a college or in practice, for no one knows from what a hint may come that will advance our knowledge. From the twitching of a frog's leg has sprung the modern uses of electricity, and from the study of brewing arose antiseptic surgery, and these examples show how little we can tell whither a line of study may lead.

VALUE TO THE PUBLIC OF STATE MEDICAL SOCIETIES.*

By GEORGE BEN. JOHNSTON, M. D., LL. D.

Professor of Gynæcology and Abdominal Surgery, Medical College of Virginia; President of the Southern Surgical and Gynæcological Association.

I am sensible of the high honor conferred on me by my friends of the Medical Society of Virginia in elevating me to the exalted office of president, and I wish to thank them sincerely for this mark of confidence and regard.

This office imposes the duty of speaking to a mixed audience, a task not easily accomplished, for it is difficut to choose a subject alike interesting and profitable to lay and medical hearers.

Because the real reason for the existence of such organizations as this is not well understood and their importance not properly appreciated, I will dwell briefly on the "*Value to the Public of State Medical Societies.*"

There is a disposition to regard such societies as either trades' unions or social organizations where scientific work is only an incident. Let me correct this fallacy at once. Our societies have no commercial aspect, and the social feature of our conventions is only secondary to the serious affairs we meet to discuss. We are organized solely to accomplish three purposes: to advance science, promote philanthropy and foster good-fellowship. The last of these propositions needs no demonstration; it is self-evident after what lookers-on have seen and will see during this meeting. The first and second require proof.

To day there is neither a State nor Territory in this great Union which is without its State or Territorial medical society. All are modeled on the same general plan and have the same objects in view. They vary in age from two years (Utah, founded in 1895) to one hundred and thirty-one years (New Jersey, founded in 1766). In membership they range from forty (New Mexico) to three thousand (Pennsylvania).

From replies to inquiries addressed to officers of these societies I am able to give the following trustworthy statistics:

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*Presidential address delivered before the Medical Society of Virginia, Hot Springs, September 1, 1897.

STATE MEDICAL SOCIETIES.

State.	Membership.	Medical Law Secured by State Society	Brd. Health Secured by State Society	Transactions, How Published.
Alabama	1,200	Yes	Yes	Book
Arkansas	270	.....	.....	Not published
California	300	Yes	Yes	Book
Colorado	325	Yes	.....	Book
Connecticut	623	Yes	Yes	Book
Delaware	156	Yes	Yes	Book
District of Columbia	300	Yes	.....	Book
Florida	130	Yes	Yes	Book
Georgia	500	Yes	.....	Book
Idaho	55	Yes	.....	Not published
Illinois	700	Yes	Yes	Book
Indian Territory	84	Yes	Yes	Not published
Iowa	700 Aux.1700	Yes	Yes	Book
Indiana	1,800	Yes	Yes	Book
Kansas	300	Yes	Yes	Book
Kentucky	515	Yes	Yes	Book
Louisiana	500	Yes	.....	Book
Maine	410	.....	Yes	Book
Maryland	500	Yes	.....	Book
Massachusetts	2,200	Yes	Yes	Book
Minnesota	500	Yes	Yes	Journal
Michigan	550	Yes	Yes	Book
Mississippi	400	Yes	Yes	Journal
Missouri	350	Yes	Yes	Book
Montana	230	Yes	.....	Journal
Nebraska	299	Imperfect	Imperfect	Book
New Hampshire	375	Yes	Yes	Book
New York	443* 880†	Yes	Yes	Book Book
New Mexico	40	Yes	Yes	Not published
New Jersey	821	Yes	.....	Book
North Carolina	500	Yes	Yes	Book
Ohio	950	Yes	Yes	Book
Oregon	127	Yes	.....	Book
Pennsylvania	3,000	Yes	Yes	Journal
Rhode Island	260	Yes	Yes	Book
South Carolina	300	Yes	Yes	Book
South Dakota	100	Yes	Yes	Book
Tennessee	400	Yes	.....	Book
Texas	356	Imperfect	.....	Book
Utah	81	Improvem't	.....	Book
Vermont	235	Yes	Yes	Book
Virginia	900	Yes	Yes	Book
Washington	185	Yes	Yes	Book
West Virginia	300	Yes	.....	Book
Wisconsin	500	Yes	Yes	Book

* Medical Society State of New York. † New York State Medical Association.

It will be observed that these societies have an aggregate membership of 24,570, which almost equals the numerical strength of the Nation's standing army.

To the thoughtful person it must be apparent that membership in one of these societies is a valuable possession and a mark of distinction. Most rigid and exacting requirements for entrance are imposed. Creed, political affinities and social status are ignored. The gauge is laid on merit. Sound morals, good citizenship, professional rectitude and technical skill are demanded. This standard of moral and intellectual excellence brings into their ranks only the best element of the profession; men whose character and attainments entitle them to rank with the best in their communities, whose professional acumen and honesty fit them to discharge the duties of their high calling with confidence, prudence and skill, and whose trained faculties constitute them the guardians of the public health.

I cannot help believing that if our aims and purposes were better understood by the public our efforts would receive greater sympathy and more cordial support than have heretofore been accorded them. Our labors are entirely in behalf of the public, and are marked by an abso-

lute unselfishness. We are educators and public benefactors in the fullest meaning of the term. Every sick person, rich or poor, profits by the educational benefit his physician derives from attendance on these meetings. Every citizen receives the protection procured through the instrumentality of these societies in the passage of protective statutes and the promulgation of the laws of hygiene.

Every State medical society (except those of Arkansas, Idaho, Indian Territory, and New Mexico) publishes its transactions annually either in book form or as a monthly journal. (Minnesota, Mississippi, Montana, and hereafter Pennsylvania, in the form of a monthly journal, all the others in an annual volume.) These publications constitute about 22,160 pages. Deducting 2,160 pages for minutes, we see 20,000 pages devoted to scientific or strictly technical matter. Some of the most valuable contributions to medical literature appear in these transactions. It is impossible to estimate their importance. The best of them find their way into medical journals and reach thousands of readers beyond the confines of the State from which they emanate. Every article published in these transactions, and the author of it, is listed in the great monthly publication, *Index Medicus.* This gives authors ready access to special articles which facilitate systematic study of diseases and conditions influenced by widely varying topographical and climatic influences. Thus authors and teachers are enabled to make use of this vast and valuable annual collection of medical and surgical literature, much of which is by these means permanently preserved in text-books and disseminated in the class-room.

A still more important work, if possible, has been accomplished by the State societies in practical legislation, and, I regret to record the fact, in spite of the most unreasoning and unreasonable opposition on the part of the people. The passage of laws such as we have advocated before national, State, and municipal legislative bodies have invariably been for the protection of our neighbors, and never in any way such as would result in personal or professional gain to us. On the contrary, they have been for the adoption of measures that would inevitably curtail our revenues. Where have you seen men of other professions banded together in leagues, striving to reduce the business from which they gain a livelihood? A medical man as a mere individual can have no more interest in the public weal than any other good citizen; however, his semi-official guardianship of public health impels him to go forward with unselfish purpose to protect those who constitute his charge. I have seen—and so has every other gentleman who has advocated the passage of laws to provide for the protection of the people in the way of dismissing quacks and pretenders and establishing protective health measures—the very ones we sought to benefit rise up in violent opposition to our undertaking, as if our purpose looked to professional and personal aggrandizement instead of bestowing a boon upon our fellows. How dull and blind such are!

Many of us recall the day when no qualifications to practice medicine were called for by the State beyond the mere payment of the license tax. The most ignorant, unscrupulous, debased person who paid this tax to the State was constituted by the law a doctor with all the rights and privileges enjoyed by the learned, upright, and beloved physician. Happily this has come to an end, and to-day we see existing in almost every State and Territory laws regulating the practice of medicine—they would be more properly styled laws for the protection of the people. These laws are more or less effective. Some are nearly perfect, others as yet deficient. It is to be hoped that within the fulness of time all will be brought up to the standard of the New York law, which should serve as a model for future statutes and a guide for amendments to present imperfect laws. I append a list of those States which have enacted statutes regulating the practice of medicine,* and I am prepared to assert upon official information that the State Medical Society in every State enjoying such laws, except Oregon and Utah, was the direct instrument and means by which these beneficent measures were secured to the people. These laws had but one object, to furnish the people with only properly equipped practitioners. They called into existence many State examining boards, whose function was to select qualified men. It was soon made apparent that even many of those holding diplomas were not qualified. Careless and inferior schools saw their graduates excluded from the privileges of practice, and their classes diminished, because young men contemplating the study of medicine began to choose their school with discrimination, having in view the purpose of properly fitting themselves to meet the requirements of the various examining boards. The effect of all this was to elevate the standard of medical education. New subjects were added to college curricula, practical work was required, the time of study lengthened, and more rigid examination ex-

*See table on page 350.

acted. In consequence of these laws we observe an improvement in the material from which medical men are formed; a better preliminary education of medical students, the higher technical education of doctors, the admission into practice of only well-qualified physicians and the rapid disappearance of the pretender and the quack—all of which results to the great benefit of the people.

The creation of legal requirements to enter into the practice of medicine accomplished by the various State societies acting independently of each other, has made a profound impression on the medical schools all over the country. Without exception they have advanced their requirements for entrance, prolonged their terms of study, and perfected their methods of teaching. They have also entered into hearty co-operation with the licensing boards and have banded themselves into a league whose purpose it is to still further elevate the standard of education and secure uniform methods of teaching. The natural consequence of these distinct advances and the attraction of public attention to the work in this line of societies and licensing boards brought about the formation of the "Confederation of National Examining and Licensing Boards." This organization is yet young but rapidly pushing forward to accomplish a splendid work, and it deserves the hearty support and co-operation of every State society and licensing board. Its objects are to exalt medical education, to establish a fixed standard of requirements to enter the profession of medicine, to procure uniformity of laws regulating the practice of medicine, and reciprocity between the various State organizations by means of which the license of one board will be recognized and accepted everywhere. These are aims greatly to be desired, and from the present trend of legislation it is not too much to hope that they will be speedily accomplished. There is no need for a National Board of Licensers. All of this should be regulated by the representatives of the various States assembled in the councils of the National Confederation agreeing upon definite methods and prerequisites.

The laws regulating the practice of medicine may be divided into three classes (C. E. Busey, M. D, Washington, D. C):

First Class, Virginia and others. A diploma confers no right to practice and has no legal value. The right to practice is determined by examinations before boards of examiners enacted by law.

Second Class, California and others. The diploma is subject to the supervision of some designated body, vested by law with authority to determine its validity as evidence of its possessor's qualification to the practice of medicine. Failing the possession of such diploma, the right to practice may be acquired by passing a satisfactory examination.

Third Class, Where any kind of a diploma from any "chartered" medical institution is sufficient to entitle its holder to registration and the right to practice.

As long as this dissimilarity in statutes regulating the practice of medicine exists, it is easy to see how the States of the second and third class must suffer by becoming the dumping-ground for the refuse and offal rejected by States of the first class. Self-protection alone, it would seem, should induce them to meet the required standard, and thus secure their citizens against the evils and perils of an ignorant medical profession.

The results obtained in another department of legislation are not less striking. In all the States having laws regulating the practice of medicine, except Colorado, Georgia, Idaho, Louisiana, Montana, New Jersey, Oregon, Texas, Utah, and West Virginia,* State boards of health have been secured to the people by the efforts and through the wisdom of the State medical societies.

In every instance the initiative was taken by the State Society and successfully carried out. These boards have been of inestimable value to the public in the way of promulgating the laws of hygiene, in the prevention of epidemics, the suppression of those already existing, and the conduct of commerce in times of public fear. It is true that some of these boards are not sufficiently supplied with means to properly equip them for efficient work, yet their very existence is a safeguard to the people, and, although deprived of State help, they accomplish much good. State and municipal governments and the people are blind to their own welfare not to give more general encouragement to those guarding their health, wealth, and safety.

Some of us remember when epidemics of small pox, cholera, or yellow fever would devastate entire cities and destroy commerce. Before boards of health were interposed between these destroyers and the people, by the efforts of our State societies, there was scarcely a year that some section of our country was not scourged by one or more of these dread visitors How this is all changed by the pres-

*These States have boards of health which, however, were not established upon the suggestion or by the aid of the State societies.

ence in almost every State, city and town of an efficient board of health. These bodies instruct the people in preventive measures; look to the household safety by house-to-house inspection; pass on the efficiency of the sanitary arrangement of contemplated buildings; teach hygiene in public and private schools; institute compulsory vaccination; require the presence of contagious or infectious diseases to be reported, and keep a surveillance on all such cases; isolate them as far as possible; disinfect contaminated buildings; destroy all sources of infection; see to the wholesomeness of our foodstuffs; inspect our meats, fish, and vegetables; prevent deleterious adulteration of manufactured foods; purify our markets; cleanse our streets and dispose of offensive garbage; stand guard over our drinking water, and in a thousand other ways look to the safety of the public health. All these measures, executed by men who are either not paid at all, or if compensated, insufficiently so, have added greatly to the average of human life and given to the people a sense of security they scarcely deserve, because they have not borne their part in procuring the means which have brought them these blessings.

These boards, in times of pestilence, stand in the same relation to towns and cities which military garrisons do in times of war. They are ever on the watch, and their vigilance never sleeps. Quarantines are laid on or against stricken cities or communities; possible means of spreading infection or contagion are prohibited; seaports are scrupulously protected; inspection is everywhere required; suspects are isolated; merchandise is dealt with according to safe protective methods, and every precaution taken by these faithful servants to prevent spread of disease. Pestilence is thus checked and life and property saved. It is not difficult to estimate the commercial loss to a city from the presence in it of an epidemic of a contagious or infectious disease. What would happen to one of our seaport towns to day if she should become the centre of an outbreak of yellow fever or cholera? Immediately upon the appearance of infection, a cordon or corrall is thrown around her; the ports of the world are closed against her; her incoming freights seek other markets; her exports are arrested; communication with her is prevented; her people are locked within her gates to await their fate; mercantile houses close; banks suspend; values shrink; factories shut down; capital lies idle; her wealth dwindles, and fortunes disappear. Millions of money are forever lost to her, and years are required for the repair of her losses. Other communities suffer as well. The hindered imports and exports are important to remote communities, and their arrest works disaster to trade in general. When these facts are realized, is it not singular that our philanthropic aims are not more earnestly seconded by the people and State? We stand between them and danger. They rely on us to protect and save them when disaster threatens or is upon them. Why will they not recognize in our attempts safety to property and the enjoyment of peaceful protection, and lend us their moral support and vote public money to the protection of public health?

I am constrained to believe that the derelictions of the people are in large part due to ignorance. It is our duty, then, as members of this Association, in connection with others of a similar character scattered all over the country, to enlighten our constituency by personal instruction. Let us not hide our light under a bushel, but plainly proclaim to the world why we exist, what we have accomplished for the good of our fellows, and ask for a generous and intelligent co-operation in the prosecution of our good work, much of which is yet to be done.

In conclusion, let me make a single recommendation. We have worked with only the purpose of benefiting our fellows. Let us trust that we may be permitted to do this in our own sagacious way. Let our law-makers realize that we alone are competent to choose those who are to execute the function of licensers of practitioners and health officers. We know the fittest men for these high duties; let us be given the selection of them. Remove these appointments entirely from politics and put them where they properly belong—into the hands of the wise men whose wisdom and foresight have secured them to the people as the instruments of this protection.

REMARKS ON SO-CALLED TYPHO-MALARIAL FEVER,

As It Occurs in the Counties of Dinwiddie, Greensville, Prince George, Sussex, Surry and Southampton, Va.*

By JOEL CRAWFORD, M. D., Yale, Va.

(1) What is typho-malarial fever?
(2) Is it genuine typhoid or enteric fever?
(3) Is it an atypical typhoid fever?
(4) Is it malarial fever with the "typhoid

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state," like typhoid-pneumonia, typhoid-dysentery, etc.?

(5) Is it a hybrid or combination of malarial fever (proper) and typhoid fever? Or,

(6) Is it a continued fever of a different nature from either of the above?

This disease—whatever it may be—has been honored by many different names from time to time, according to the predominating symptom or symptoms—as slow fever, nervous fever, sweating fever, the typhoid-bilious, and at present it is commonly called malarial fever.

Were it, strictly speaking, a malarial fever, quinine ought to be a specific in the treatment of the disease, preceded by a cathartic dose of calomel, provided time would permit its use. But, on the contrary, the administration of quinine after the first few days of its onset is likely to do more harm than good, while calomel, in ordinary purgation doses, is deadly.

For the first few years of my professional career, I looked upon it as being malarial fever with the "typhoid state," solely because Prof. Alfred Stillé (now Emeritus Professor of Theory and Practice of Medicine in the University of Pennsylvania) had taught his class to believe it. He says: "'Typho malarial' fever was a name conferred upon typhoid cases of remittent fever by the late Surgeon Woodward, U. S. Navy, who was a scientist and clinician."

Notwithstanding the fact that some few cases do make their appearance from time to time which present, from a clinical standpoint, the features of both diseases in combination, I now look upon the disease as being a modified, irregular, or atypical form of typhoid, without any malarial admixture.

Etiology.—Although occasionally met with in winter and spring, it is especially frequent during summer and autumn months. It seems prone to make its appearance in malarious regions where the people are crowded together, as in camps, saw-mill sites, etc., under bad hygienic conditions, with a water supply contaminated with sewage.

Polluted drinking water seems to me to have been the most fruitful cause of the cases of the fever that came under my observation. Possibly the typhoid bacilli of Eberth and others, together with the plasmodium malariæ of Laveran, play an important rôle in the causation of the affection.

Anatomical characters.—As I have never had the opportunity of holding any autopsies, I will not refer to the post mortem appearances.

Symptomatology.—The onset of typho-malarial fever is more abrupt, as a usual thing, than typhoid, or there may be a few days of general malaise preceding the onset. Occasionally it makes its appearance very insidiously. There are one or more chills and the temperature rises suddenly, and not gradually as in typhoid. In fact, the elevation of temperature never assumes that characteristic ascent of typhoid.

As in typhoid fever, there are frontal headache, muscular or neuralgic pains throughout the body, more especially in the lower extremities, back, and some portion or portions of the trunk. The characteristic "rose-colored spots" over abdomen and lower thorax of typhoid fever never make their appearance in this disease. While there is more or less tympanites from time to time, there is seldom any special tenderness in the right iliac fossa.

Constipation is almost invariably present, though occasionally diarrhœa occurs. Should the temperature reach a high degree in the outstart, there may be quite active delirium, but as a usual thing, if there is any delirium at all, it makes its appearance later on, and then only a slight nocturnal (of a low muttering type), unless the cerebral or nervous type predominates, and then there may be low muttering, alternating with maniacal delirium, or convulsions in nervous children, drunkards, and some syphilitics.

In about ten days or two weeks, the morning temperature falls to normal, or even becomes subnormal, with an evening elevation, when the disease is likely to end in a few days by crisis, sweating, diarrhœa, marked general prostration, etc., while some seem to end by lysis. Sometimes the nervous symptoms predominate throughout the whole course of the disease, and then again the profuse sweating is a prominent symptom, with high temperature.

Varieties.—There seem to be several varieties or types of the disease, as asthenic, cerebral, cardiac and intestinal; the last by far is the predominating one.

Some cases are very mild indeed—so much so that the temperature rarely reaches 102° F. at any time during the whole course of the affection. Then again the symptoms are so well marked as to remind one very much of typhoid fever; but I have never seen a typical case of genuine typhoid fever in the section of Virginia which I am speaking.

Diagnosis—At first it is very difficult, and at times impossible, to differentiate the disease to which I am referring from bilious (remittent) fever. The decided effect of a full dose of a cinchona salt, given as a therapeutic test, is an important help in diagnosis; and, finally, an examination may be made for malarial organisms in the blood.

Prognosis.—This fever is milder and less fatal than genuine typhoid. Under appropriate treatment, nearly all will get well. It is a rare thing for a negro to die of it.

Modes of death.—Late in the course of the disease, when the temperature has become almost normal, should there be a sudden elevation of temperature reaching 106° F. or more (hyperpyrexia), in a very limited time death will soon close the scene. Some few cases will die of heart failure in spite of all treatment. But by far most of the fatal cases succumb to intestinal perforation and peritonitis. Some die of asthenia or adynamia.

Complications.—The principal complications are nervous prostration, heart failure, intestinal hæmorrhage, etc. I have witnessed profuse and very copious hæmorrhages (intestinal) in quite a number of cases with good recovery, but nevertheless, it is a very alarming symptom.

Sequelæ.—The principal one is rheumatism in some form, which usually disappears within a few weeks or months.

Treatment.—Possibly in the outstart of the disease—*i. e.*, in the bilious stage before ulceration has set in—a blue pill or a small dose of castor oil, with a few drops of oil of turpentine, is admissible; but under no circumstances should that deadly remedy, calomel (in full purgation doses), be administered. When that drug has been given ignorantly, I have often known these cases to succumb to general prostration and die as late in the disease as the fourth or fifth week, in spite of all supporting and stimulating treatment. It seems to have such a depressing effect on the system that it is impossible to rally the patient. Such victims either succumb speedily to profuse diarrhœa and intestinal hæmorrhage, or die later on of general prostration. Whenever it becomes necessary to move the bowels, use enemata only. For the first four or five days, quinine is admissible to eliminate any malarial admixture.

Put the patient in bed and keep him there. Rest, and rest in the recumbent posture, is the first and most important indication in the treatment.

Liquid diet.—Fresh milk, liquid peptonoids, etc., intestinal antiseptics, sulpho-carbolate of zinc, carbonate of guaiacol, creosote, salol, nitrate of silver, turpentine, etc., seem to do good, regardless of Prof. Osler's statement that there are as yet no intestinal antiseptics. Minute doses of bichloride of mercury have yielded good results in my hands; also picrate of ammonium in the asthenic cases.

Antipyretics.—The coal tar products especially have to be given with caution on account of their depressing effect. Though admissible in many cases, their effects are to be guarded by stimulants.

The sponge bath is very good in many instances. Treat symptoms as they arise. I would give the Woodbridge treatment with "fear and trembling." In short, the treatment should be the same as in typhoid fever.

SOME SUGGESTIONS AS TO THE CLINICAL LABORATORY OF THE PRACTICING PHYSICIAN.*

By JOHN D. THOMAS, M. D., Washington, D. C.
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Diagnosis is the battle ground of scientific medicine. Upon that field must be fought to a finish the conflict between empiricism and science in the progress of medicine towards a *true* science. And in this conflict is emphasized the dependence upon the men in the ranks to achieve results. Upon the practicing physician rests the work of accumulating evidence as to whether claims made by progressive methods shall stand or fall.

Of late years, more attention has been paid to the very important branch of diagnostic medicine called laboratory investigations. Because of some very marked failures in the correctness of diagnoses made by these methods when they were in a primitive stage, a feeling of unreliability was fostered against them. But as every infant must have many falls before learning to walk, so this infant branch of scientific medicine suffered many failures. It is unnecessary to recount the different steps by which it has attained its present high position. The importance of this work is acknowledged by the medical schools of the world, as is shown by the requirement of a thorough course of laboratory training before graduation.

But the efforts of the essayist shall be to suggest how the busy practitioner can improve his own diagnoses, and at the same time add to the knowledge of the profession at large by doing, to a certain extent, his own laboratory work. It increases reports upon various methods that may be advanced as aids in diagnosis or otherwise. It is instructive to the physician himself, often confirming or disproving an uncertain diagnosis made from physical signs. The question of time necessary to the work is of minor importance,

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though often advanced as the principal argument against it. For after your laboratory is in working order, the time spent in confirming, for instance, a doubtful diagnosis of tuberculosis, will not aggregate a half nor a third the time lost in worrying over an uncertain one.

Another objection often urged is the extent and cost of the paraphernalia necessary; and a very proper one, if it is intended to do extended chemical and physiological quantitative analyses. But to accomplish surprising results with the examinations which are necessary in the ordinary routine of practice, the following outfit is sufficient, with the addition of a few minor details as individual necessities require:

A microscope with three objectives, three, seven, and one-twelfth oil emersion, two eye pieces, Abbé condenser, movable stage; slides, cover glasses and forceps; watch glasses, test tubes, glass funnels, rods and pipettes, measuring glass graduated in metric system; spirit lamp, or Bunsen burner; urinometer, ureometer, Fleischl's hæmometer or Gower's hæmoglobinometer; centrifugal machine, with hæmatokrit.

And the following re-agents: Distilled water, alcohol, absolute and 95 per cent.; ether, chloroform, the stronger acids C. P.; the stronger alkalies C. P.; tests for sugar in urine; tests for phosphates, chlorides, sulphates in urine; for urea; normal salt solution; stains for bacteria and for blood; test papers or solutions for gastric and saliva analyses; litmus and filter paper.

Until recently, one of the great obstacles to individual laboratory work by the general practitioner was the proper preparation of the stains necessary. This has been eliminated to a great extent by some of the drug houses supplying them ready for use. But in some instances it is much better for the physician to prepare his own stains, as some are weakened by age; and further, if results of staining are not satisfactory, he will know how and where to remedy the defect. It is not absolutely necessary to have a movable stage to your microscope. But the time saved and the accuracy gained by it will more than compensate for the cost.

With this outfit, the secretions and excretions of the body can be made to yield up to the physician what information they may hold of the cause and nature of disease. The saliva, sputum, stomach contents, feces, urine, urethral and vaginal discharges, conjunctival discharges, pus, pleuritic and ascitic fluids, and the blood, will all give up their quota of information to the physician who will seek it in the laboratory.

Time forbids a detailed account of the diagnostic information to be acquired from an examination of all of them. A cursory glance must serve to emphasize what a more extended study would give.

The Sputum.—Your case of incipient lung trouble brings a specimen of sputum. With the platinum wire spatula a small particle of the thickest portion is picked out, placed on the end of a glass slide and spread out well by another slide pressed down on it and pulled apart. Both are put aside for two or three minutes to dry in the air; then passed quickly through the flame three times. Holding the slide by the free end with a hemostat, put on the spread a few drops of Ziehl's solution of fuchsin, hold over the flame until it bubbles, wash off in water, add a few drops of a solution of methylene blue in a 25 per cent. solution of sulphuric acid; let it remain for thirty seconds, wash off with water, dry with filter paper, put on a drop of cedar oil and examine with a one-twelfth oil emersion lens. If *tubercle bacilli* are present, they will be brought out as a distinct red against a blue background; and a positive diagnosis is made in time to give the patient a chance for life in a suitable climate.

In doubtful cases of *pneumonia*, examine the sputum for the diplococcus of pneumonia, and you have another point to aid in a diagnosis. Examine it for pus in suspected cases of abscess of lung, respiratory track, or liver; in the latter case, it may have pierced the diaphragm and pleura. In severe cases, the progress of the disease may be shown by finding particles of lung tissue in the sputum.

The saliva may be examined for potassium iodide in certain gastric tests, in which this drug is exhibited to find by the rate of absorption the absorptive power of the stomach and the presence of free HCl. This same test can be used in other cavities of body, as the bladder, to determine if there is an injury to the mucous membrane.

The stomach contents.—The investigations of the functions of the stomach and its juices, so ably carried on by Ewald, Boas and others, has led to surprising results in our knowledge of that organ. And some of these methods of investigation have been put within reach of the practicing physician. Lavage of the stomach is now an every-day occurrence in practice. And while the simple act of lavage in itself is often of great benefit, especially in cases of mucus and chronic gastritis, so much more can

be added to our store of knowledge by analyses of the stomach contents.

But the time and accuracy required in many of them put them beyond the limits of this paper. Yet the qualitative and quantitative estimation of HCl, upon which so much depends for a correct diagnosis of gastric disorders, can be made with little trouble. A drop or two of Gunzberg's reagent is added to a like amount of stomach contents in a porcelain dish and heated over a flame. If HCl is present in even so small an amount as 1 in 20,000 we get a rose-red color. The test paper prepared from this same reagent can be used instead of the liquid reagent. A drop on the test paper and heated in a porcelain dish, and the rose-red color is seen. To determine the *amount* of HCl, titrate the stomach contents with the 1 10 normal sodium hydroxide solution, and ascertain when it is neutralized by the disappearance of the reaction to Gunzberg's reagent. Normally, the total acidity of the stomach contents is practically an expression of the total amount of the HCl. The acids of fermentation (lactic, acetic and butyric) may also be factors in this total acidity. But their estimation would require too much time for consideration in this paper, though of very great practical importance.

The comparatively small amount of information gained by this analysis will greatly aid the physician in making the differential diagnosis between carcinoma and ulcer, and the different gastralgias.

The feces.—The examination of the feces requires an expenditure of time and a more extended training in certain lines than the busy practitioner can afford. Yet they may yield even to the inexperienced the amœbæ coli of dysentery, the spores of various animal parasites, or the parasites themselves, red blood corpuscles, pus, biliary and intestinal concretions, etc.

The urethral and vaginal discharges.—Since the discovery by Neisser of the gonococcus as the cause of gonorrhœa, no diagnosis of that disease can stand unassailed without the demonstration of that organism in the discharge. And since it is so easy of demonstration it should never be neglected. With the preparation of a specimen in the same manner as the sputum, after fixing by passing through the flame, put on the slide a few drops of an alcoholic solution of methylene blue, leave for two to three minutes, wash in water, dry with filter paper, and examine with 1·12 oil emersion lens, or even a 7 Reichert or 8 Lentz. You then have before you the positive evidence of the cause of the discharge.

And upon a microscopical examination alone can depend a diagnosis of spermatorrhœa. More often in these cases a *negative* diagnosis will cure the patient when drugs and moral suasion have failed to even benefit.

In the vaginal discharge may sometimes be found cells and fragments showing the existence of epithelioma of the cervix. In doubtful cases of abortion, a microscopical examination may show chorion villi.

The semen.—The stigma of sterility resting upon a woman can oftentimes be shifted to the proper shoulders by a microscopical examination of the semen of the husband.

The urine.—One of the few laboratory investigations taught in the schools for years was urinalysis. And every physician has in his daily practice tested for albumen and sugar. But when you have acquired these two facts have you learned all the urine can tell you of your patient? A few c. c. of magnesian fluid will show the presence of phosphates. A few c. c. of a solution of silver nitrate to a urine acidified by nitric acid will throw down the chlorides. And the barium chloride solution precipitates the sulphates. The full clinical significance of these reactions is still *sub judice*, and as was mentioned in the first part of this paper, it remains for the general practitioner to demonstrate what reliance can be placed upon deductions already made. With one of the simple ureometers, as Doremus', and the hypobromite solution, it is only a question of a few minutes to know the amount of urea excreted. To a drop on a porcelain dish add a drop of commercial nitric acid, and if bile is present a play of colors will appear. To 10 c. c. of urine add 10 c. c. HCl and 1 c. c. chloroform; then add 1 or 2 drops of concentrated solution of calcium chloride and shake well; if indican is present, you get a blue precipitate; if iodides, an intense red. Amount of indican to be judged by intensity of color. Simon maintains that the indican test is as important as the albumin and sugar tests, indicating as it does the degree of intestinal putrefaction.

By the addition of a small piece of caustic soda and stirring, the presence of pus can be proven by the urine becoming mucilaginous and ropy; and this can be further corroborated by finding the pus cells under the microscope, which will also demonstrate the presence of tube casts, showing the stage of the nephritis by the character of the casts—red blood cells, if disintegrated and appearing as a mere ring, indicating a probable nephritic hæmorrhage; if shape is retained, a probable vesical or urethral hæmorrhage; epithelium from different

portions of urinary tract, crystals, as uric acid, oxalate of lime, phosphates, etc., and parasites of various kinds.

Conjunctival discharges.—Prepare a slide just as with the sputum; stain with a solution of methylene blue for one to two minutes; wash, dry and examine with the one-twelfth oil emersion. The gonococcus of Neisser may be found, giving a positive diagnosis of gonorrhœal ophthalmia, or the small bacillus of Weeks, confirming the diagnosis of that form of conjunctivitis known as "pink eye." Dr. Burnett, of Washington, says that nearly one fourth of the cases of total blindness are caused by ophthalmia neonatorum; and he speaks in the strongest terms of the neglect of so many obstetricians to use the Credé or other method to disinfect the child's eyes at birth, especially if there is any history of a discharge from mother or father. If preventive medicine is to be exhibited, why not bring it to bear earlier by making an examination of the discharge from the parent, getting your positive diagnosis, and disinfecting also, as far as possible, the vaginal canal at labor?

Pleuritic and ascitic fluids, when centrifugated with the centrifugal machine, may show pus, blood cells, cancer cells, or, upon staining, tubercle bacilli.

The blood.—Simon, of Baltimore, says: "It can be truthfully said that, in our latitudes at least, the physician who does not resort to the microscope in fever cases, ignores an infallible aid to diagnosis." "Again and again the author has seen cases in which the clinical symptoms alone would not have warranted the diagnosis of malaria, and in which the true nature of the disease was cleared up only by a careful examination of the blood; and cases have often been seen in which the diagnosis of malaria, based upon clinical symptoms alone, was disproved by the absence of plasmodia from the blood and by the result of the post-mortem examination." With such positive assertions as these, coming from a clinician having the wide experience of Simon in a disease we are brought in contact with almost every day, we can no longer disregard this positive aid to a diagnosis.

In examining for *malarial organisms*, it is much better to study the fresh unstained specimen of blood if you can get your patient and microscope near together. If this is impossible, a specimen can be kept fresh for several hours by putting a little oil or vaseline on the edge of the under surface of the cover-glass. Recourse can also be had to the cover glass or slide-spreads, which can be made at the bedside, dried a few moments in the air, and can then be kept for any length of time until you are ready to stain and examine with the microscope. In making a stained preparation, put in absolute alcohol for half an hour to fix, then float them bloodside down on a solution of eosin and methylene blue for a few minutes; wash in water, dry and mount in balsam for microscopical examination. The red cells are stained red and the plasmodia and nuclei of the white cells blue.

In *anæmia*, a deficiency of hæmoglobin contents can be easily demonstrated by Fleischl's hæmometer. A diminution of the number of red cells can be demonstrated with the Thoma-Zeiss counting apparatus, or more quickly and just as accurately with the hæmatokrit—a modification of the centrifugal machine. With your microscope, you can also make a diagnosis of pernicious anæmia by the variations in form of the red cells (poikilocytosis), of leukæmia, by an increase in the number of leucocytes, and many others, with a more elaborate study. In fact, hæmatology has become almost as much a specialty as gynæcology, dermatology, etc., and the recent investigations with the *Widal test for typhoid fever* point to a certain early diagnosis of that much dreaded disease.

These few suggestions as to the possibilities of a practicing physician's laboratory are necessarily meagre in detail and limited in scope. They are offered with the hope that some seed may fall in fruitful ground, and that the spirit of true scientific investigation may grow until some of the waste places in medical diagnosis are made to blossom and bloom like the tree of bacteriology.

The Cairo.

SOME REFLEX TROUBLES CAUSED BY SWOLLEN MIDDLE TURBINATE BODIES.*

By ALFRED C. PALMER, M. D., Richmond, Va.

I regret that I have not enough data to place my article beyond the pale of a query, but the line of investigation is rather a new one and the evidence is necessarily sparse. I am decidedly convinced in my own mind that the following cases, with others that I will not consume your time in mentioning, open up a channel through which investigations by the general practitioner may bring relief in the

* Read before the Twenty-eighth Annual Session of the Medical Society of Virginia at Hot Springs, Va., September 1, 1897.

two forms of reflex troubles they meet in daily practice—viz.: Facial neuralgia during pregnancy, and nervous prostration following grippe.

Case 1.—Mrs. A., aged 28, during the fifth or sixth month of her second pregnancy, became subject to very severe pains in the left side of the face, passing over the left brow and through the left eye, almost constant in character, and causing congestion of conjunctiva and quite profuse lachrymation. It had been diagnosed as simple facial neuralgia. After suffering for some weeks she consulted me, and I made an examination of her eyes and found a slight myopia, which was corrected.

This did not afford even temporary relief; in fact, I did not at the time believe it would. I then made an examination of the nasal spaces and found an intensely red and swollen middle turbinate body on the left side, having a glazed appearance as if varnished. When this was touched with a probe, every reflex symptom mentioned above was intensified. I applied cocaine until I saw it shrink, thereby reducing its pressure upon the septum.

This was followed by almost instant cessation of the pain. I did this from day to day until I tided her over a period of several weeks with comparative comfort, at the end of which time the nasal body resumed its normal condition and no return of pain followed.

Case 2.—Mr. M., aged 45, four or five weeks previous, had an attack of grippe which took the usual course. The acute symptoms passed off within a week, leaving him in a typical state of the nervous prostration that is the usual sequel of this trouble. He complained of lack of energy, inability to concentrate his ideas, a heavy, dull aching in the neighborhood of the frontal sinus, sharp shooting pains through the eyeballs, burning sensation of the lids, and an occasional feeling of loss of coordination. The voice was of cavernous quality. A rhinoscopic examination brought to view an enlarged middle turbinated body on each side in a highly inflamed and swollen condition, presenting the same glazed appearance as described in Case 1.

During the first examination, as usual, I made the cocaine application, pushing them well up between the septum and the turbinated bodies with the cotton-tipped probe. In a few moments the patient's voice assumed its natural quality, and he remarked that the relief was phenomenal. For several days I cauterized these bodies with the galvano-cautery, and at the same sitting disinfected the middle fossæ with antiseptic sprays applied directly to the parts. The patient began to improve after the first cauterization. This treatment brought about a final cure.

It is my desire, in presenting Case 1, to call the attention of the obstetricians to these turbinated swellings that I have noticed during the term of gestation, and to ask if such has been their observation; and suggest that in the future, they apply treatment locally to these conditions and ascertain whether or not the many forms of facial neuralgia which attend this period are not relieved. I believe that the proper plan of treatment in Case 1 should have been cauterization, on account of the rigidity of the swelling.

In commenting upon Case 2, I would say that in my opinion the prostrating nervous condition following grippe, which is so familiar to us all, is in nearly all cases due to this swelling of the middle turbinated bodies, producing the pressure upon the septum—a pressure which rests upon the highly sensitive membrane covering these bodies, and sends reflex influences to all parts of the nervous system. Such swelling, furthermore, causes the middle fossa to become a comparatively closed cavity, so that its secretions are retained and produce great pressure in this region in their efforts to escape.

Necessarily, under this condition of affairs, the lining membrane of the cavity must become intensely congested, as mentioned above. I know of no treatment that meets the requirements of the conditions superior to the shrinking of these bodies by the galvano-cautery or chromic acid. This serves a twofold purpose—opening the cavity, and thus relieving the congestion and allowing the accumulation to escape, and at the same time destroying the sensitiveness of the local nerve terminals in the mucous membrane covering these turbinated bodies.

What I have said regarding facial neuralgia during pregnancy, suggests a question which I am not prepared to answer—viz.: Is there any sympathetic connection between the gravid uterus and the nasal erectile tissue?

13 *West Franklin Street.*

Discussion.

Dr. Alexander Duane, New York, N. Y., as illustrative of the sort of reflex connection that Dr. Palmer had indicated as existing between turbinate hypertrophy and the gravid uterus, cited instances in which intermittent swelling of the turbinate bodies was associated with irritation of the bladder, frequent mictu-

rition, and vesical tenesmus. These vesical symptoms appeared to keep pace with the turbinate swelling, and to abate with the latter.

Dr. Joseph A. White, Richmond, Va., remarked that he had listened with interest to Dr. Palmer's remarks on reflexes from engorged or swollen middle turbinates, because he had not only had similar experiences, but has referred to such effects more than once in some of his published articles, especially as to the production of recurring and intolerable neuralgias. In fact, he is satisfied that we meet with more reflex disturbances from hypertrophy of the middle turbinates than from similar conditions of the inferior turbinates, either anteriorly or posteriorly. Earlier writers on this subject laid more stress on the inferior turbinates as the starting point of nasal reflexes; but subsequent observations demonstrated that the middle turbinates and the erectile tissue over the vomer were an equally fertile field for such manifestations. The space between the middle turbinate and septum is so slight that hypertrophy of the former is apt to bring it into contact with the latter, such contact increasing the irritability of the parts, and bringing about ganglionic disturbances, both in near and distant areas of the nervous system, in individuals of neurotic tendency. This latent tendency must, of course, exist in order to produce reflexes, just as appropriate soil must be found for the development of bacterial organisms. Without it, hypertrophies, contact, pressure or synechiæ produce no effect beyond obstructed nasal respiration or drainage. Some of the most annoying and obstinate cases to treat in his experience, with or without reflex effects, are those cases with adhesions between the middle turbinates and the septum, and which are so often complicated with ethmoidal disease. The separation of the synechiæ and the amputation of the turbinate, constitute the only satisfactory treatment.

Dr. Palmer, in closing, asked the members of the Society to follow up the suggestion that there may be some sympathetic connection between the gravid uterus and the erectile tissues of the nasal bodies, and mentioned a case of extreme swelling of the lower turbinates in the fifth and sixth months of pregnancy which was not accompanied with neuralgia.

TONSILLITIS—TIC DOULOUREUX, WITH REFERENCE TO CLINICAL TREATMENT.

By F. W. FABRICIUS, M. D., New York, N. Y.,

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Tonsillitis.

Simple tonsillitis is a harmless affection, rarely calling for active interference. The follicular variety, however, if neglected, may place the patient in a critical condition. Repeated attacks ultimately result in hypertrophy of the lymphoid elements in the pharynx.

Tonsillitis, *per se*, is not a self-limited disease; therapeutic measures, therefore, if applied early, are highly beneficial in checking the disease before reaching the chronic stage.

One of the most efficient remedies at our command is the salicylate of sodium. In the acute variety, especially during an epidemic, this drug seems to exert an almost specific inhibitory influence. The salicylates reduce temperature, lessen pain, arrest fermentation, and check putrefaction—all prominent factors in acute throat affections. On an empty stomach they irritate and induce nausea; they should, therefore, be suspended in milk or dissolved in mineral waters and administered soon after eating. In capsule or pill form the irritating qualities of the drug delay prompt absorption. The most suitable preparation is the salicylate of sodium, alternating, if necessary, with the oil of wintergreen.

In all cases, unless directly contraindicated, an active purgative proves of service. Calomel is a universal favorite, and deservedly so. One-quarter of a grain, in the form of tablet triturate every ten minutes, till four or five grains are consumed, will, by the aid of a Seidlitz powder, ensure free action in the course of two to three hours.

Satisfactory results can only be obtained by prompt exhibition of the remedial agent. In ordinary tonsillitis, sodii salicylatis gr. xv, sodii bicarbonitis gr. xx, every three hours, will generally effect a cure within twenty-four to thirty-six hours.

In the severer types, the treatment must be more energetic and the intervals between doses lessened; after five or six doses, the quantity may be reduced one-half without changing the time; we must be guided largely by the tolerance of the individual, although the drug is well borne in the acute stage, especially if of the parenchymatous variety. The tincture of the chloride of iron exerts a favorable influence on

the progress of the disease, and is given in five minim doses, well diluted, every two or three hours, alternating so as to avoid a combination with the salicylates, which results in an unsightly mixture.

If early in the disease, the temperature runs high and the skin is dry and hot, half minim doses of tincture aconite root every half hour for three or four hours, relieve the cutaneous irritability and allay the burning pain in the throat.

Gargles are of little avail, as they fail to reach the seat of inflammation; a mouth-wash, consisting of boric acid or alum flavored with peppermint, serves to cleanse the buccal cavity, which, with strict attention to the cleanliness of the teeth, is vastly important in all throat affections. If the excreted fluid is abundant, the pharynx may be mopped out at regular intervals with cotton soaked in peroxide or other antiseptic lotions.

Convalescence is generally established on the third day, and the salicylates can then be omitted. The iron should be continued, if the patient is in poor physical state.

When suppuration threatens, early incision must be advised; but only in exceptional cases will surgical interference be necessary. Out of 198 cases subjected to the above treatment in hospital and other practice, but four terminated in tonsillar abscess, two of which belonged to the chronic parenchymatous variety.

In greatly enlarged tonsils, multiple scarification with a bistoury, brings considerable relief to pain and lessens the discomfort during deglutition.

In chronic cases subject to acute exacerbations, the following combination applied directly to the inflamed area, has yielded gratifying results:

℞. Tinct. aconit. rad..... ʒss
Tinct. bellad..... ʒj
Tinct. ferri chlor..... ..... ʒij
Tinct. iod. co..... ʒiiss
Glycerin.....q. s. ℥j
M. S.: Topical. Apply with brush.

Chronic tonsillar hypertrophy sometimes improves under iodides of potassium; tonsillectomy, however, is preferable; it is performed when the inflammatory process is least active, to lessen the risks of free hæmorrhage and septic absorption.

The after-treatment should be directed mainly towards prophylaxis interdicting heavy smoking and the use of raw liquors.

Tic Douloureux.

In the treatment of neuralgia of the fifth nerve, the salicylates have yielded very satisfactory results, more so than any other agent; out of seventy-two cases under observation, not one proved disappointing. The following will serve as an illustration:

A confrêre was subject to monthly attacks of severe trigeminal neuralgia, for which he had three healthy molars extracted in the hope of obtaining relief. The pain later on increased to such intensity that he was compelled to take morphine, sometimes one-half a grain twice during an attack, which generally lasted four days.

At the onset of the next attack he received gr. xv of sodium salicylate combined with gr. x of sodium bicarbonate, continuing with gr. v each every fifteen minutes for five doses, after two hours repeating the first full dose. In the course of two hours the pain gradually abated and left him free for four and a half weeks, when it recurred with undiminished severity. The same plan of treatment was resumed with similar success. This time the paroxysm did not return for two and a half months, when it was easily controlled by one full dose of salicylate of sodium. Since that time the attacks recur only once or twice a year. The origin of the neuralgia in this case was not clear; rheumatic history could not be obtained.

23 *West Eleventh Street.*

SOME CHARACTERISTIC SYMPTOMS THAT HELP IN THE DIFFERENTIAL DIAGNOSIS OF IRITIS.*

By W. H. BAKER, M. D., Lynchburg, Va.

I propose to ignore the more modern and tempting subjects in ophthalmology, and re-introduce to you a subject that may be called old and hoary, but it is still a most dangerous and familiar enemy, namely, *Iritis.*

I was induced to select this disease for the subject of a brief paper, because it is often mistaken for conjunctivitis, and we so often see cases suffering with iritis, that are being treated for conjunctivitis, with the usual astringents, and the usual results following a neglected iritis—that is, a pupil closely adherent to the anterior surface of the lens capsule, bound down by iritic adhesions—a sad victim of a mistaken diagnosis.

Therefore, it is my desire to call attention to to the most apparent, the most easily discovered, and the most characteristic symptoms of iritis.

*Read before the Twenty-eighth Annual Session of the Medical Society of Virginia, at Hot Springs, Va., August 31–September 2, 1897.

The books tell us that there are three principal forms of the disease; these are the plastic, the parenchymatous, and the serous, and that there are many types modifying these main varieties. But as the characteristic symptoms are common to all the forms and types of the disease, and the results of maltreatment are about the same in one as in the other, we will use only the generic term "iritis" in speaking of its trouble. Just so we do not call it conjunctivitis or glaucoma, we may, with perfect safety, call it any or all kinds of iritis.

The difference in the appearance of the sclerotic zone, in the two troubles, is very marked. In conjunctivitis, the translucent conjunctival membrane is inflamed, imparting to the "white of the eye" a velvety red appearance, and on everting the eyelid it will be seen that the redness is continuous over the whole palpebral conjunctiva. Whereas in iritis, the redness lacks the velvety appearance just mentioned, and is caused by an injection and meshing of the vessels of the sclerotic coat, particularly apparent at the corneo-scleral junction; and on drawing the lower eyelid downwards, it will be noticed that the injected vessels do not move with the conjunctiva, but remain stationary, thus proving that they are situated beneath the conjunctiva in the sclerotic coat.

In the early stages of iritis, the palpebral conjunctiva is unaffected. It is important to recognize the disease as early as possible, in order that we may successfully use remedies for the prevention of synechia. After the disease has continued for several days, the conjunctiva becomes more or less involved, but there is never any sticking or gluing of the eyelids together by muco-purulent matter, as in conjunctivitis, and there is always a great deal more lachrymation and severe pain referred to the supra-orbital region, which increases as the night advances, with intense photophobia; whereas there is only slight, if any, photophobia in conjunctivitis.

On comparing the diseased with the healthy eye (a practice that should be adopted in all cases of eye trouble), we will find a lack of brilliancy in the coloring of the fibres of the iris and a muddy or cloudy appearance of the pupil, and on testing the activity of the pupil by opening and closing the eyelids of the affected eye, it will be seen that the iris is much more sluggish in its movements than it is in the healthy eye. None of the symptoms mentioned obtain in conjunctivitis. Furthermore, the patient will complain of dimness of vision and inability to use the eye without much pain.

When the eye is examined with a reasonable amount of care, it is very apparent to the most casual observer that there is a wide difference between the two diseases. So wide is the difference that the books (with few exceptions) ignore the possibility of mistaking the one for the other; but nevertheless, the mistake is made with comparative frequency, accompanied with dire injury to the eyesight if the greater is mistaken for the lesser trouble.

The busy and often overworked physician sees comparatively only a few cases of iritis and very many cases of conjunctivitis. Therefore, when a case of inflamed eye presents itself, he is often forced to give it a rapid and too casual examination, prescribe his favorite astringent (the worst thing that can be used in iritis), and tells his patient to report again in a few days. Should the case prove to be a case of iritis, the patient will no doubt be forced by the pain to report very promptly, and very much sooner than expected; but even then it may be too late, because the secretions thrown off by an inflamed iris are copious and rapid, and very probably that membrane will be found closely adherent to the crystalline lens, with which it lies in contact, and we find an eye irreparably injured, eyesight permanently maimed, and all because of a mistaken diagnosis.

Surgical procedures for the purpose of destroying the adhesion formed between the iris and the anterior capsule of the lens are very dangerous to the integrity of the eyeball, as a secondary iritis may follow the most carefully and skilfully performed operation. This fact makes it more important to recognize the trouble early, so that the proper remedies may be used vigorously, and then surgical interference in the future will be unnecessary.

The first remedy indicated in the treatment of iritis is one of the mydriatics. The sulphate of atropia is the most reliable and most easily procured. The hydrobromate of scopolamine is valuable as an adjunct, and will frequently destroy very recent adhesions, but unfortunately, even if we succeed in destroying the adhesions by the use of mydriatics, the sight will be marred more or less by the pigment spots left upon the anterior surface of the lens where the iris was adherent. Hence, the great importance of an early recognition of the disease is still more emphasized, for even a delay of only a few hours may be disastrous. The very first questions to ask a patient who presents himself with a sore or red eye are, first, Were the eyelids stuck together this morning when you awoke? And, second, Do you suffer any pain?

The answer to these questions will help very much in arriving at a correct diagnosis. Should the first question be answered in the affirmative and the second in the negative, it will usually be safe to prescribe the much adored astringent. I say *much adored*, because all doctors seem to have a great love for astringents in all cases of inflamed eyes, and that often in utter disregard of the cause of the inflammation and redness. Fortunately for the eyesight of humanity, the majority of such cases are conjunctivitis, and they are right in prescribing astringents. If the questions are answered doubtfully, or a positive statement made of some pain and no gluing of the eyelids, and still all other symptoms of iritis are absent, be sure to use a mydriatic. You can do no harm by following such a course of treatment, for in the vast majority of cases that complain of some pain around the eyeball, a slight mucous discharge, with conjunctival redness, and no gluing of the eyelids in the morning, it will only be a short time until iritis will be so apparent "that he who runs may read," and the doctor will have the satisfaction of knowing that he has gotten a good safe lead in the race for the salvation of an eye.

When convinced that we have an iritis to deal with, let us not content ourselves with a weak solution of sulphate of atropia, dropped into the eye once or twice a day, but use a solution of four (4) grains to one ounce of water, dropped into the eye every two (2) hours.

A swollen and inflamed iris does not yield readily to the effect of a mydriatic; even after we have obtained a thorough response to the influence of the medicine, the effect will very soon pass away, and contraction of the pupil will soon follow. An instillation in the morning, followed by a good dilution, will be a contracted pupil in the afternoon, with adhesions, if the drops are not used in the interim.

The iodide of potassium with mercury, should be given in every case of iritis, unless there is a good history of rheumatism. Even then it is well to combine them with the salicylates. These remedies have a good effect in iritis, even if there is no history of syphilis.

I find that it is almost useless to make inquiries about syphilis. As a rule, people who are otherwise honest will lie, and repudiate with scorn the implied base accusation of their ever having been exposed to the infection.

Therefore, if there is no positive contraindication, the usual antisyphilitics should be given.

I never saw a case of iritis in which sulphate of atropia locally and potassium iodide and mercury internally failed to do good; and I never saw a case of conjunctivitis harmed by these remedies. So if there is any danger of an error, be sure to err on the safe side. The sulphate of atropia never causes any injury in conjunctivitis, but a failure to use it at the proper time has resulted in the production of many disabled and useless eyes.

The danger of irido lenticular adhesion to the future well-being of the eye is largely in proportion to the extent of the adhesion. If the synechia is complete, and the connection between the posterior and anterior chambers obliterated, we may have constantly recurring attacks of iritis, which can only be prevented by a successful iridectomy.

One form of iritis, designated by the term *serous*, is accompanied with so much swelling of the iris and secretion of lymph, that there is a great deal of tension and hardness of the eyeball, and consequently it has been mistaken for acute glaucoma. But worse still, this trouble has been mistaken for iritis and treated with mydriatics.

In glaucoma we have a cloudy, aqueous humor, sluggishness of the pupil and dimness of sight, as in iritis, but no photophobia, and the cloudiness takes on a decidedly greenish tint at the pupil. The pupil is always dilated, whereas it is contracted in iritis, and while it is sluggish in iritis, it is usually inactive in glaucoma under the stimulus of light. On looking at the eye obliquely, it will be seen that the iris is pushed forward into the anterior chamber in glaucoma with the curvature outwards, conforming to the inner curve of the cornea. The pain is more neuralgic in its character, and there will be a history of what the patient calls neuralgia of the eyeball; the attacks have been rather frequent recently, and each attack a little more severe than the last. Happily, this trouble is much rarer than iritis, having become much less frequent as the proper correction of errors of refraction approaches nearer and nearer to an exact science.

It is very important that iritis and glaucoma should not be confounded, because this is the one eye trouble in which all mydriates are to be avoided as religiously as the plague, because they will do untold harm by increasing the tension of an already hard eyeball, and will add the finishing touch to the complete destruction of the eyesight. So, then, it is just as important to recognize the characteristic symptoms of glaucoma as against those of iritis, as it is to recognize the symptoms of iritis as against those of conjunctivitis.

There is often just as much redness of the

sclerotic in glaucoma as in iritis, but sometimes no redness at all. The hardness of the eyeball is more marble-like in its feeling under the eyelid, but nothing like so sensitive to the touch as in iritis.

To recapitulate briefly, we will say that if a patient presents himself complaining of the eyelids being mattered and stuck together in the morning, but little if any photophobia, no pain, and if the pupil is clear, and muscular fibres of the iris unclouded, and the sight undimmed, we may safely prescribe an astringent. But if there should be no gluing of the eyelids, an angry red eye, some pain, whether much or little, make a careful examination, comparing the iris of the diseased eye with that of the normal, and if there is any sluggishness of the pupil, or lack of brilliancy in the color of the iris, when compared with the activity of the pupil and brilliancy of the iris in the healthy eye, and contraction of the pupil with little if any tension of the eyeball, prescribe a mydriatic.

If there is only a slight injection of the sclerotic zone, no photophobia, a dilated pupil, and considerable complaint of neuralgic pain, more or less constant, and increasing towards night, and hard eyeball, be careful about prescribing a mydriatic, for we may have a case of glaucoma, and in avoiding Scylla, we may fall into Charybdis.

NOTE.—I have refrained from mentioning the pathognomonic signs of glaucoma revealed by the ophthalmoscope, because, as I take it, very few physicians are familiar with that instrument.

DISCUSSION.

DR. HARRY L. MEYERS, Danville, Va., thought that perhaps some of Dr. Baker's remarks were a little deceptive, particularly in regard to the relationship of iritis and conjunctivitis. It was possible to have both iritis and conjunctivitis at the same time, as is very often the case in the severer forms of conjunctivitis, and therefore, the fact that the lids glue together from secretion would not necessarily imply that there was no iritis. It was true, as Dr. Baker stated, that we might have an iritis without adhesion between the iris and the capsule of the lens, and with or without great pain about the eye and the temple, but such cases usually have dim vision, and were known as serous iritis. A positive diagnosis, however, of such cases, was almost impossible without the ophthalmoscope, which would show the cloud in the aqueous humor and in the cornea due to deposit upon the posterior face of the latter tissue. This deposit also occurs if there is any cyclitis. Most cases of iritis, however, are brought to the doctor by the pain, which is the chief symptom, coming on most severely in the night, and allowing the patient little rest. This is usually absent, or in a very slight degree, in any case of conjunctivitis.

DR. JOSEPH A. WHITE, Richmond, Va., remarked that Dr. Baker's paper very aptly calls attention to distinctions or diagnostic differences between eye troubles that are apt to be confounded by inexperienced or careless observers, whose errors of diagnosis might be followed by disastrous effects because of the consequent improper treatment. But both Dr. Baker in his paper and Dr. Myers in his remarks lay some stress on the importance of what was formerly known as "serous iritis," characterized by a somewhat dilated pupil, a deep anterior chamber and the formation of opacities on the posterior face of the cornea, in contra-distinction to the shallower chamber, contracted pupil and adhesive deposits on the anterior face of the lens, which are seen in ordinary plastic iritis. Dr. White trusts that they will pardon him for suggesting that this so-called serous iritis is not an iritis at all, but a mild form of cyclitis, and that the term "serous iritis" is practically discarded in recent ophthalmological literature. Whilst nearly all cases of iritis are more or less complicated by a cyclitis because of the immediate proximity of the ciliary bodies, one of the principal signs of such complications is the deposition of effusion on the posterior face of the cornea, when the pupil is free enough to allow of its passage into the anterior chamber. But when the pathological changes are limited to the ciliary bodies, as is sometimes the case, we have a picture of the so-called serous iritis or Descemetitis, which is later on followed by similar changes in the iris with plastic effusion and adhesions to the capsule, giving us what was formerly called "sero-plastic iritis."

DR. E. W. ROW would be glad to learn from the eye disease specialists if there was any reliable internal medical treatment that the general country practitioner could give for the relief of iritis. He never uses atropia now, for he has seen no benefit from it. Mercury, with or without Dover's powder, iodide potash, etc., he uses, because his experience has not taught him anything better. He thought the paper could have been made of more interest to general practitioners if the author had given a little more attention to their interests.

DR. BAKER, in closing, said that he had nothing to add to what he had stated in his paper, but, in reply to Dr. Row, he would say that the

Doctor's remarks exemplified what he had often thought, namely, that the general practitioner heeded very little what the specialist said, and if Dr. Row had listened to his paper, he would have found that he not only recommended the use of atropia in iritis, which should always be used to prevent adhesion between the capsule of the lens and the iris, but that he moreover advised the very internal treatment that Dr. Row advocated with the exception of the Dower's powders.

PSORIASIS, WITH A CASE IN ILLUSTRATION.*

By ARTHUR JORDAN, M. D., Richmond, Va.

Lecturer in the University College of Medicine, Special Lecturer on Hygienic Dermatology at the Woman's College, Richmond, Va, etc.

The disease which we invite you to consider is one of the most common skin diseases. It occurs frequently in Scotland, forming 7.25 per cent.; in America it is less frequent, the percentage being about 3, while in Vienna it is even less prevalent, being present in only 2.8 per cent. of all cases. It is a complaint which, in many instances, occasions little inconvenience, if we except the annoyance which may arise, in extensive forms of the malady, from the accumulation and subsequent falling of the characteristic scales. This fact may influence its statistical record—the subjective symptoms not requiring the professional care of the physician.

It is a cutaneous disorder which has several pronounced characteristics. For example, the eruption consists of round or oval, bright-red patches, covered with more or less thick, *silvery* white, adherent scales; it occurs "especially upon the extensor surfaces of the elbows, knees and extremities, and upon the scalp,"† and, finally, is usually chronic.

The most ingenious theory that has been advocated as the cause of *psoriasis* is the parasitic one, brought to the notice of the profession by Lang, of Innspruck. This ætiological factor has not been accepted by all dermatologists, but has many advocates. It is supported, 1st, by the favorable condition of the skin upon the elbows, knees and scalp. The integument upon the former localities is much wrinkled, the folds being quite deep in many instances, and serves as a favorable ground for the lodgment and multiplication of the parasite. 2nd, the fungus has been well demonstrated and figured by Lang, Wolff and Weyl. 3rd, cases have been recorded tending to prove its communicability; *e. g.*, "Unna has cited a curious instance where three children in succession became, within a short time, affected with psoriasis after a nurse-maid suffering from it was engaged as their attendant; and Lassar also applied a mixture of scales, lymph and blood, removed from a man afflicted with psoriasis, to two rabbits, and induced directly thereafter a scaly skin disease closely resembling it in both animals." As opposed to this parasitic origin of the disease, Ries has shown conclusively that the epidermidophyton is not only not the specific organism of this disease, but that it is an artificial product and not an organism at all. This would seem to decide the matter, yet the parasitic theory deserves a further consideration, inasmuch as it furnishes many explanations for the peculiarities of psoriasis, as observed in the clinic.

The next most important cause is one of disturbed nutrition of the skin, due to some functional weakness on the part of the cutaneous nerves, which in general manifests itself in isolated spots, but which may, through growth in time, affect the entire surface of the body.

Heredity plays a very important rôle just here, and has been clearly proven as the starting point for repeated attacks. In a case which came under our observation, the history of heredity was so clear and connected that we had no hesitation in establishing a line of treatment which had for its object the correction of the defect of nature and a decided amelioration of the trouble was the reward of the therapy.

Before leaving this division of our subject, we must not fail to invite attention to the marked influence which age, sex and racial peculiarities exert upon the initiation, the progress and ultimate termination of the attack.

The symptomatology presents three chief characteristics, which, from their universal prevalence, are valuable aids in formulating indications for treatment. They are 1st, the scales; 2nd, the chosen sites for its appearance; and 3rd, its tendency towards chronicity.

First, as to the scales. The primary lesion of psoriasis is the macule, which at its earliest moment is covered with a delicate silvery white scale. These scales may be of a single layer or they may be heaped up so as to resemble a patch of mortar stuck on and covering

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*Read before Medical Society of Virginia, during its Twenty-eighth Annual Session, held at Hot Springs, Va., August 31–September 1 and 2, 1897.

†Diseases of the Skin, by Dr. G. Jackson.

the red skin beneath. They may adhere to the surface or be cast off in such large quantities as to cover the patient's under clothing or accumulate in large quantities upon the bed-clothing. When the shedding is so extensive, a veritable cloud may be produced by shaking either of these garments. Upon the removal of these scales from a patch the hyperæmic papillæ are exposed, and bleed upon the slightest provocation. The patches may continue to increase in size until the entire body is involved. This much-to-be-dreaded condition is fortunately rare, but was present in our case, which is one of the reasons that prompted us to report it.

Secondly, the most favorite locations for the disease are over the extensor surfaces of the extremities, especially about the elbows and knees. The next most frequent place, after these, are the sacrum, the chest, the scalp, the face, the belly, the genitals, and rarely the hands and feet.

Finally, the disease tends to run a chronic course, and relapses are frequent. Fortunately, the subjective symptoms, under these circumstances, are not very annoying, and consequently do not act as a drain upon the general health. Indeed, it is not infrequently the case that the patient enjoys the best of health while the disease runs through its successive stages.

The pathology of this disease has been well worked out by Dr. A. R. Robinson, of New York. According to this observer, "the disease consists in an overgrowth downwards of the interpapillary cones of the rete, with a corresponding increase in the length of the papillary portion of the corium which separates them. The meshwork of this part of the cutis is opened out, and becomes œdematous, the vascular loops in the dilated tissue are more convoluted than in the normal condition, they are gorged with blood corpuscles—congested—and there is exudation of leucocytes into the tissue round. The deeper parts of the corium are in the early stages unaffected, but in more chronic conditions some degree of œdema, of enlargement of vessels, and emigration of leucocytes occurs there also. The corresponding parts of the hair follicles participate in like changes. At first the corneous layers of the epidermis are little affected, but the continuance and extension of the changes in the rete and upper part of the corium induce a more rapid, but at the same time a more imperfect, cornification of the epidermic cells. Thus hillocks of scales arise which are deficient in cohesion; and these being easily removed, the layer of cylindrical cells is reached, and may be detached as a film, exposing the bleeding papillary vessels." The silvery hue of the scales in psoriasis was explained by Wilson as due to the inclusion of minute particles of air within and between the loose, imperfect, spongy, horny masses

The diagnosis is not difficult, and there is but one disease, in our opinion, that is likely to cause any confusion and it is seborrhœic dermatitis. Unna gives four very important differences, which, if well weighed in making a differentiation, will place the cognomen of the disease beyond doubt. They are: 1st. Seborrhœic dermatitis spreads from above downward, mostly in the middle line of the body, and its lesions are quite stationary in character; while psoriasis begins on the elbows and knees, and more speedily affects the whole body. 2nd. There is always a history of a seborrhœal affection of the scalp in seborrhœal dermatitis. 3rd. The scales of seborrhœal dermatitis are fatty and crumbling, and the patches are yellowish; in psoriasis the scales are white friable, not greasy, and the patches are bright red. 4th. The proneness of the patches of seborrhœal dermatitis to form bow-shaped figures, or rings more or less broken. Psoriasis may be circinate, but the margins of the figures are not so narrow and not follicular as they may be in seborrhœal dermatitis.

From the very cursory review that we have taken of the symptomalogy and pathology, it is easy to formulate the following *indications* for treatment:

1st. To employ such hygienic and dietetic remedies as will overcome every hereditary tendency on the part of the cutaneous system that will act either as a primary or secondary ætiological factor.

2nd. To employ such remedies as will exert a specific influence on the various pathological processes.

3rd. The judicious application of local medication and methods which have for their object the alleviation of the subjective and objective symptoms.

4th. Prophylactic measures which will either prevent a return of the disease or which will place the patient in a position to be easily brought under the influence of treatment.

To show the beneficial application of treatment as outlined in the foregoing indications, we invite attention to the subjoined case.

Case.—Mr. L. C. K., æt. 54, residing at No. 521 south Belvidere street, Richmond, Va., presented himself for treatment at our clinic February 12, 1897. His family history showed

that his sister suffered from some skin disease, the nature of which could not be definitely determined from the patient's statement. His aunt, on the father's side, was also the victim of a cutaneous malady, and his daughter had suffered from acne vulgaris as she passed through the physiological period that acts as a connecting link between childhood and adult life.

His present history was the more interesting because it was one of general good health. Being a nailmaker by trade, he led an arduous life, and during his twenty-five years' acquaintance with the disease, had made good time. He had had the diseases usually coincident to childhood, but no bad effects had manifested themselves after their disappearance.

His first psoriatic attack was about twenty-five years since. It began on the left shoulder and presented much the appearance of a spot of candle grease. It then occurred on the left elbow. Careful inquiry failed to determine positively whether the shoulder or elbow was the first place attacked. The next place to be attacked was the centre of the breast. From these points on the body it continued to spread more and more with each fresh attack until *at the time* when he came under our care, it had pervaded nearly the entire body. The attacks are usually preceded by prodromatæ. The appetite becomes impaired, and at times disappears entirely; there is a general indisposition to do anything, with malaise, and some little fever. Prior to the appearance of the eruption, there is a marked burning of the skin, which is replaced by some itching after the eruption is fully developed. Macules, covered with scales, begin to form, which are at first discrete, but afterwards coalesce as the disease progresses. The general objective symptoms of the case do not differ materially from those mentioned under symptomatology. The special features which, by reason of their wide divergence from the usual course of the disease, interest us most, are the wide extent to which the disease prevailed and the excessive shedding of the scales. When we first saw him, the disease had exempted his head, face, palms of his hands, and soles of his feet. Later on, these parts became involved, which fact makes the case a *unique one.* The nails began to thin about ten years since, and though no eruption appeared near the matrix or roots, yet there was a fine mealy substance present in great abundance, especially marked about the roots. Then there began to grow another nail with a distinct mark between the new and old. *At present,* they appear thick and striated longitudinally. Beneath the right thumb is a hard callous mass resembling much an ordinary corn as usually seen elsewhere upon the body.

The treatment was essentially one of a combination of arsenic, internally, and chrysarobin, locally. We prefer to use the arsenite of soda, which does not undergo alteration by age.

The patient made a complete recovery after being under treatment for about six or eight weeks.

In conclusion, the *practical points* that we wish to impress upon you are:

First. The great extent to which the disease prevailed, there being few cases upon record where it was so universal.

Second. The decided influence which arsenic exercised over the pathological process.

210 *N. Sixth Street.*

New Instruments, etc.

Frazier-Lentz Hot-Air Apparatus for Treating Rheumatism, etc.

This is an apparatus recently devised for the application of dry air at a temperature of 200° F. to about 350° F., for acute and chronic lithemic cases—rheumatism, gout, sciatica, ankylosis (following rheumatism or traumatism), arthritis, synovitis, sprains, etc.

Description.—It consists of a copper cylinder, 24 (or 30) inches long by 16 inches diameter, attached to the bottom of which is a Russian iron fire-box, containing a Bunsen burner extending the full length of the fire box and projecting through one end to permit attachment of gas tubing.

On one end of the cylinder there is a large door, which can be instantly opened, and to the other end is attached a flexible sleeve of cloth with a double draw string, so that it can be drawn firmly and closely around the limb.

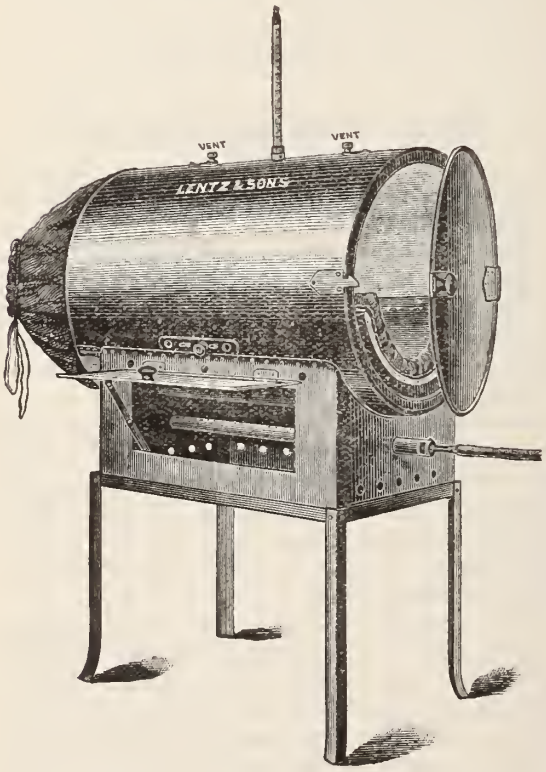
The upper two-thirds of the cylinder is lined with sheet asbestos, which is riveted directly against the copper. The lower third is also lined with asbestos. It is not attached directly to the cylinder, but is supported on three iron bars running the full length of cylinder, and at a distance of about 1½ inch from it.

On this asbestos sheet rests a very thick magnesia cradle, stiffened and strengthened with iron bands and covered with a suitable material to prevent the limb from coming in actual contact with the magnesia. (We have experimented with a number of materials, but find

magnesia the very best for the purpose, from its non-conduction of heat, etc.) This cradle is therefore perfectly insulated from the direct supply of heat by the air space, thus allowing free circulation of *dry, heated* air.

At the top of the cylinder are three openings. Through the centre one a long, easily readable thermometer protrudes, registering to 400° Fah. The openings on each side can be opened and closed at will, and serve as air-vents for the escape of moisture. At the lower part of the cylinder, immediately above the fire-box on each side, are other three holes, which can also be opened to any extent at will, and serve as inlets for the air, to ensure free circulation.

The whole apparatus described rests upon a strong angle iron frame, bringing the cradle on a level with an ordinary chair.



Application.—The cradle is removed from the apparatus and the door closed. The burner is lighted and the temperature of the cylinder allowed to rise to about 150° F. The cradle (which is, of course, now at the temperature of the room) is then inserted by opening the door, which is then closed again. The patient, having previously been seated in a chair, the arm or leg is placed in the apparatus, resting on the cradle, and the sleeve is adjusted around shoulder or thigh. The temperature of the circulating air is allowed to reach and remain at about 300° F., or more, for forty to sixty minutes at each treatment.

The temperature of patient's body remains normal, or nearly so, during the treatment, the greatest variation recorded being 100° F. Pulse rate is increased on an average of ten beats per minute.

Results.—This apparatus was first used in the Surgical Out-patient Department of the University Hospital (Philadelphia), where some 300 baths were given in order to test its efficiency. The cases that were treated included acute and chronic articular rheumatism, gonorrhœal rheumatism, gout, traumatic arthritis, synovitis, tenosynovitis and fibrous ankylosis.

The results obtained at the above institution were reported as being most satisfactory. In most cases where pain was the prominent symptom, it was greatly relieved; where there was an effusion in the joint it was very much diminished; where fibrous adhesions had formed, causing a more or less complete ankylosis, they were much more easily broken up. It was noticed that if the adhesions were first broken up and the limb then inserted in the hot-air bath, the pain that usually follows was less severe and the adhesions less apt to re-form. As an adjuvant to the treatment of those painful affections of the structures in and about joints it is looked on as indispensable.

Obstinate cases of sciatica have been cured in one treatment at a temperature of 212° to 222° Fah.

This apparatus is manufactured by the well-known manufacturers of high-grade surgical instruments and hospital supplies, bacteriological apparatus, microscopes, etc., Messrs Chas. Lentz & Sons, Philadelphia, to whom we are indebted for the description in detail, the use of electro, etc. We learn that the apparatus is being used by some of the very best men in Philadelphia, and is giving perfect satisfaction. So many have been sold during the last few weeks that it is hard to keep pace with the demand. Price seems to be exceptionally cheap—$35.

Dr. Charles Minor Blackford, Jr.,

Has resigned the position of Instructor of Normal and Pathological Histology and Bacteriology in the Atlanta (Ga.) Medical College, and will go to Augusta to accept the newly created chair of Pathology in the Medical Department of the University of Georgia.

Editorial.

State Care of Epileptics in Virginia.

The Commission for the State Care of Epileptics in Virginia met in Richmond, September 15th and 16th, 1897. Dr. Geo. W. LeCato, of Wachapreague, chairman; Dr. Wm. F. Drewry, Petersburg; Col. W. P. McRae, Petersburg, and Capt. C. E. Vawter, of Crozet, were present. The object of the meeting was to take preliminary steps for compiling a report to be submitted to the Legislature, to convene in December. A number of medical experts from various parts of the State were present by invitation.

Dr. Benj. Blackford, superintendent of the Western State Hospital, at Staunton, Va., submitted a report, embracing a plan for the better treatment of epileptics. His report says that there is an alarming increase of epileptics in Virginia within the last few years. Something must be done sooner or later, either to build separate buildings at existing insane hospitals, or to have a separate institution on the "colony plan" for the care and treatment of this class.

The epileptics should not be confined in the same wards with the insane from other causes. The cries of many when fits are coming on, and the convulsive movements when seizures take place, are distressing in the extreme to many intelligent patients, especially those of a sensitive nature, or those who are recovering; not only so, but many epileptics are dangerous to themselves and others, and during the exciting stage need constant watching. It would be a great boon to our State hospitals were one or two separate buildings set apart for this class, under greater supervision than can be the case in our hospitals, as at present constructed.

We have in the Western State Hospital about 150 epileptics; many of them, where mental conditions justify it, work in the garden, on the farm, and other places about the institution. They have their fits while at work, and after they are over, get up and go on with their work, as if nothing had happened; others, whose mental condition require them to occupy separate wards, are dangerous to themselves, and others, by their frequent attacks of epileptic mania and suicidal and homicidal impulses.

It is very evident that, unless something is done for the separate care of this class, our existing hospitals will soon be over-crowded with epileptics, and no room left for the treatment of the insane from other causes.

The ever-increasing demand for asylum accommodations, together with the steady proportionate increase of epileptics, will very soon necessitate the erection of further buildings. To colonize the epileptics now in our State hospitals in a separate institution is simply providing further accommodations for the insane from other causes, who will take the place in the wards which epileptics vacate.

At Bielefeld, Germany, there is a remarkable colony for epileptics, about 1,500, all being cared for there; it is more like an industrial home, and is now largely self supporting and a marvellous success. New York, Ohio and other States are building separate institutions for the care of this class, with the hope that in a few years they may, to a large degree, be self supporting.

The fact that so large an amount is already necessarily expended for the care of our insane in hospitals, and the present financial condition of the State, will cause the Legislature to hesitate about incurring new obligations in establishing a new plant or a new State institution.

While the colony plan has its advantages under the existing circumstances of the State's finances it would be more economical to build for the accommodation of this afflicted class separate buildings of a cheap character under the governing power of the respective insane hospitals of the State, where they would be utilized according to their mental condition.

The wards of our insane hospitals should be relieved of this class of insanity, and exclusive treatment of the insane epileptics be conducted where it would be for the best interest of the patients, and in no way conduce to retard progress in the recovery of regular insanity. The presence of the epileptic insane associating in the wards of State hospitals with acute cases of insanity, is certainly a menace to their favorable termination.

Dr. Blackford stated it would be more advisable to have separate wards or separate buildings in the various institutions erected on a cheap scale, in order to keep expenses down. If accommodations for about 200 patients be secured at the Southwestern hospital at Marion, the present want could be supplied at an expense of perhaps $5,000. He would favor the colony plan, if the finances of the State were in a better condition.

Dr. J. D. Moncure, Superintendent of the Eastern State Hospital at Williamsburg, stated that some years ago the erection of a separate building for epileptics at Marion had been advocated for the reason that more epileptics are found in the Southwest than elsewhere. For fifteen years he had received applications for the admission of epileptics from the Southwest, where they could not be received for lack of room. Epileptics are unreliable, and need constant watching. They should be separated from other insane. He was therefore in favor of taking care of them on the colony plan, where they could be made to work for some small compensation. However, he had not been able to make them work constantly, unless some promise was held out to them. He kept his epileptic ward full, but could not go beyond that limit, and had therefore to refuse any further admission.

Out of a population of 557 at this institution, he had forty-nine epileptics. There were 226 acres of farming land connected with his institution. He suggested that the commission recommend the establishment of one annex for the female epileptics at one institution, and of another for the male epileptics, if the colony plan could not be carried out. The diet of epileptic patients should be entirely different from that of other insane patients.

Dr. Drewry, of the Central Hospital at Petersburg for colored insane, stated that the separation of the sexes had been introduced there, and had worked very well.

Dr. Blackford thought it would be cheaper for the State to purchase property with a number of buildings on it. If another plant was to be established, it could not be done for less than $15,000. If a farm was to be established by the State, the cost would be about the same for about 300 patients. If the colony plan was adopted, everything would have to be started *de novo*.

Dr. Moncure thought the various institutions would derive very little benefit from establishing a separate annex, and in his opinion the establishment of a colony plan would be of far greater advantage.

Dr. W. W. Parker read a portion of the report which he submitted to the Legislature five years ago as the chairman of a commission appointed by Governor McKinney. He took the ground that the epileptic should be classified with the chronic insane.

. In speaking of the colony plan, Dr. Blackford said if it was established. he could transfer about two-thirds of the epileptics now in his institution to the new place.

According to Dr. Drewry's statement, the epileptics are the most troublesome and treacherous patients in such an institution. Several years ago he wrote to several hundred physicians in the State for information, which brought out the fact that at that time there were in this State about 4,000 epileptics. Through the courtesy of Dr. Paulus A. Irving, of the State Board of Health, he had sent circular letters to the various counties as to the number of epileptics existing there, and had received replies from seventy-two counties. These replies indicated that the physicians who replied had, in all, 154 epileptics under treatment. About 200 epileptics are taken care of in the various poor-houses, and 220 more in the insane hospitals of the State. There are 1,900 practicing physicians in this State, while the number of epileptics is about twice as large.

Dr. J. A Hodges made some very interesting statements. It was impossible to hope for any great reform in that direction until the public had been educated and come to some understanding of these sad cases. Many people had an idea that epileptics were not sick, and therefore the State should not support them. He, however, refuted such an idea. Epileptics are sick people, and utterly incapable of taking care of themselves. They never know when they will be sick, and therefore cannot secure permanent employment. They are really sick, and their seizures ruin their mental capacity. Besides, they feel ashamed, knowing of their condition, and in that manner become incapacitated for work.

Then, again, there are a great many pretenders and quacks who advertise in the press that they can cure epilepsy. As long as such information is promulgated through the press, an improvement of the condition of epileptic is seriously hindered.

The people should be humanitarians, but it was impossible to obtain money from a Legislature for such a purpose only. It would be best to model some colony after the Bielefeld or Craig system in order to make it self supporting.

The commission then adjourned until 9 A. M. September 16.

The Commission resumed work at 9 A. M. Dr. Wm. F. Drewry and Hon. W. P. McRae were appointed a sub-commission to frame the report for the Virginia Legislature. Papers on the Caring for Epileptics, by Drs. John S. Apperson, of Marion, and L. G. Pedigo, Alleghany Springs, Va., were read. Dr. Wm. W. Parker made some suggestions, which the sub-commission are to embody in their report to the Legislature.

Dr. Drewry called attention to the fact that, after the colony plan had been recommended to the Legislature of New York, it took from fifteen to twenty years before the first appropriation was made. From $10,000, the annual appropriation for that purpose has been raised in that State to $150,000.

Captain C. E. Vawter favored carrying out the recommendations made by Dr. Blackford, so that separate quarters might be secured for insane epileptics. He didn't think that such a provision would require extra expense.

Dr. Drewry suggested that the insane epileptics be provided for in the existing State hospitals, and that the other epileptics be placed in a colony, whenever this could be done. Dr. Blackford had stated that he had room for fifty more patients at the Western State Hospital and that some of the epileptic inmates might safely be removed to a colony. In that manner, sufficient room could be secured at that institution for all the epileptics now taken care of in the various institutions, and room would also then be secured in these hospitals to accommodate those who are now in the various poor-houses.

It was also deemed desirable that the various counties that are sending persons to the colony should be taxed for a part of the maintenance of the inmates per capita. It was thought that $75 per capita would cover the expenses of maintaining the inmates at a colony, and that $40 per capita should be contributed by the counties for the inmates sent by them.

It was thought that the sum of $10,000 would be required to purchase the necessary land, while another $10,000 would have to be expended for the erection of the necessary buildings.

It was also decided that the report to the Legislature would recommend the selection of a board of visitors of three members to be appointed by the Governor and confirmed by the Senate. Another recommendation is to be that the superintendent of the colony for epileptics be a physician, and his term of office not less than five years.

The Commission adjourned subject to call of the chair.

Prize History of Medicine and Surgery in Virginia.

The Price-Nash-McGuire prize of $450, which was awarded to Dr. Arthur Jordan, of Richmond, at the recent meeting of the Medical Society of Virginia, stood for four years before an essay was submitted which was deemed worthy of it. The essay which received the award is composed of nine sections—viz.: First, *Biographical Necrology;* second, *The Indigenous Medical Botany of the State;* third, *The Mineral Springs of Virginia;* fourth, *Medical Literature and Institutions;* fifth, *The Progress of Surgery from the Landing of Captain John Smith to the Present Time;* sixth, *The Progress of Medicine for the Same Period;* seventh, *The Medical Laws of Virginia;* eighth, *Miscellaneous Matter;* and ninth, *Bibliography and Index.*

The first section, or *Biographical Necrology,* comprises the biographies of upwards of seven hundred (700) physicians and surgeons who at one time or another took an active part in forming the Medical and Surgical History of Virginia. But perhaps the most interesting feature of this section is the appearance of two hundred (200) biographies of physicans who rendered medical and surgical aid during the Revolutionary War, that had never appeared in print before. It also contains a list of all Virginia surgeons who served in the War of 1812. Dr. Jordan's effort to procure similar data relative to those of the Confederate States Army was thwarted by the present law which obtains at the War Department. However, he is anxious to complete this part of the work, and wishes all who may take an interest in it to furnish any information that will serve the purpose in end.

Under *The Indigenous Medical Botany of the State,* is comprised a list of all drugs that are to be found in the State, together with their therapeutic action and dosage. In every instance possible the first physician to employ the drug mentioned has been given.

The third section treats of the history of the *Mineral Spring of Virginia,* their climatology, and gives analysis of eighty springs.

The Medical Literature contains a history of all medical journals published in the State; the history of the transactions of societies; the name of all Virginia authors with the titles of their works and the time of publication, and a list of translators and the works or articles translated.

The Medical Institutions deals with hospitals—both public and private; all medical societies prior to and subsequent to the Civil War; the State Board of Health; the Board of Medical Examiners, the important feature of which is a tabulated table showing the members of the Board from its organization to the present time, together with their place of residence, office held, when their term of service began, when ended—whether by resignation or death—and the district from which they were appointed, with the counties composing the same.

The Progress of Surgery presents all inventions of a surgical nature; reports of surgical cases and operations; the introduction of advances in surgery, such as anæsthesia, asepsis and antisepsis, Esmarch's bandage, etc. etc.

The Progress of Medicine is fully crowded with interesting cases, showing the various methods of practice in vogue at different periods, record of monstrosities, histories of epidemics, and climatology and topography of various sections of the State.

The Medical Laws contain many interesting and instructive features, inasmuch as they show the position in which the profession has been held by the law-makers—and consequently their constituents—from the settlement of the State to the last session of the Legislature.

For the data of this history, Dr. Jordan exhausted the resources of the State Library, the Library of the Army Medical Museum and the Toner Library—both of the latter in Washington, D. C.

As giving some idea of the work done, may be mentioned the fact that six hundred (600) volumes were consulted, of which number three hundred and seventy-nine (379) were utilized in compiling the history.

There is no other State in the Union that has so complete a history of medicine and surgery as Virginia. To Dr. Jordan is due the honor of furnishing a history which is not only interesting to the medical profession, but also to all who may take an interest in the history of our State.

During the recent session of the Medical Society of Virginia, an Editorial Committee (com-

posed of Drs. Wm. S. Gordon, Richmond, Robert J. Preston, Marion, and Robert F. Williams, Richmond) was appointed, whose duty it will be to edit this Prize History and the four other manuscripts (submitted by Dr. Hugh Cumming, U. S. Marine Hospital Service, Hugh McGuire, Alexandria, Va., Jesse Ewell, Ruckersville, Va., and Wm. T. Walker, Lynchburg, Va.,) relating to the same subject; and out of all of these to make a book which will include all available matter so as to give as complete and perfect a *History of Medicine and Surgery in Virginia* as possible. Such a *History* will be of more than National interest, when it is remembered how inportant a relation Virginia occupied to the Union in the early history of America.

Obituary Record.

Dr. Bedford Brown

Died at his home, in Alexandria, Va., September 13, 1897. He was born in Caswell county, N. C., January 1, 1825. His father (Hon. Bedford Brown), was a lawyer and planter, who, at an early age, was Speaker of the House of Representatives of North Carolina, and afterwards United States Senator from that State. Dr. Bedford Brown was schooled by a tutor; then attended several North Carolina academies ; when twenty-one years old, he became Dr. Benjamin Dudley's student in medicine in Lexington, Ky., where he remained four years, graduating as Doctor of Medicine from the Transylvania University, and afterwards from Jefferson Medical College of Philadelphia, in 1854. He began practice in Albemarle and Fauquier counties, Va.; then he returned to his old home in North Carolina, where he practiced until the Civil War, when he was commissioned surgeon, first, of Floyd's brigade, then of Gen. Gustavus Smith's brigade, and then of Daniel's brigade, and then served as inspector of camps and hospitals in North Carolina. After the War, Dr. Brown located in Alexandria, Va., where he ever since enjoyed a most influential practice. Feeling the need of help, about two years ago he associated Dr. Hugh McGuire, with him in practice. He joined the Medical Society of Virginia, 1879, and ever afterwards manifested great interest in its work. He was its President 1887, and since 1888 was an Honorary Fellow. For some years, he well served as a member of the Medical Examining Board of Virginia. In 1892, he was President of the Southern Surgical and Gynæcological Association, and has been Vice President of the American Medical Association. Last year, he presided over the Pan-American Medical Congress, in session in the city of Mexico. He was a valued contributor to the journals of the country, and to the Transactions of the several medical societies of which he was a member.

A few weeks ago, Dr. Brown became the victim of what was believed to be Bright's disease. As it was evident that a most serious disease was afflicting him, his friend of many years, Dr. Hunter McGuire, Richmond, Va., was summoned to his bedside, but the case was hopeless—he died in a few hours afterwards. He was buried in Rock Creek cemetery, beyond Washington, D. C. He leaves a widow, two sons (Mr. Glenn Brown, an architect in Washington, D. C., and Dr. Wm. Bedford Brown, of New York), and a daughter (Mrs. Uhler), all of whom were at his bedside when the end came.

It is hard to think of Dr. Brown's noble life, his devotion to his profession, his earnest friendships, his ever readiness to extend the right hand of fellowship to the deserving, without emotion. As a scholar, his polished and forcible writings were eagerly sought by journals all over the country. Possessed of all the qualities that made him a good physician, his professional advice was everywhere regarded as equal to the best that could be had. Loved and honored by old and young alike, both in and out of the profession, his death is felt as a household sorrow.

At the largest meeting for years of the Alexandria Medical Society, in the office of its President, Dr. Wm. Gibson, the committee appointed to draw up suitable resolutions, submitted the following, which were unanimously adopted :

Resolved, That the members of the Alexandria Medical Society have heard with deep regret of the death of Dr. Bedford Brown, and desire to put on record their feelings of admiration and affection for their late friend and colleague. No tribute to his memory can, however, be as great as that shown by the universal sorrow with which the news of his death has been received. The purity of his character, the beauty of his disposition, his attainments as a scholar, his profound knowledge of his profession, his ability as a writer, and the elevated plane upon which he acted in all the relations of life, are too well appreciated to require comment. The Society recognizes in him the highest type and exemplar of the physician, of the citizen, and of the man. Dr. Brown's death has caused a loss to the medical profession of the entire South whose magnitude no words can express. His family in their great affliction will receive the heartfelt sympathy of his patients and friends, whose sorrow is only second to their own.

Resolved, That these resolutions be spread upon the minutes of the Society ; that a copy be sent to the family of the deceased, and that they be published in the papers and in the *Virginia Medical Semi-Monthly.*

Hugh McGuire, Chairman ; George T. Klipstein, M. D.; Wm. R. Purvis, M. D.; Wm. Gibson, M. D., Committee.

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Original Communications.

PLACENTA PRÆVIA.*

By PAULUS A. IRVING, M. D., Richmond, Va.,

Professor of Diseases of Children, University College of Medicine, Richmond, Va.

While you may think I have selected as the title of my paper a rather trite subject, it seems to me well for us, at our annual gatherings, to confer as to the best modes of procedure in the management of many diseases which are termed commonplace; for they are the ones that oftener confront the practitioner, and certainly there is not one in the catalogue of diseases that requires as sound discriminating judgment and as skilfull management as placenta prævia.

My apology for presenting this subject for your consideration is that I have recently passed through a trying ordeal with a most serious case, and one that gave me great concern for several months, which I was fortunate enough, though, to bring to a successful termination, saving both mother and child.

Placenta prævia is one of the forms of dystocia which we meet with but rarely in our daily obstetrical work, but when it occurs, the life of the mother, as well as that of the child, is often at stake, due to the great tendency, and often the presence, of exhausting hæmorrhage. Fortunately, placenta prævia is a rare complication; according to the most accurate statistics, it occurs in one to one thousand labors, or, as compiled by others, in one to fifteen hundred labors. It is oftener met with in hospital than in private practice, for the reason that hospital patients, coming from the lower strata of society, seem more prone to this trouble, for reasons that will be given further on. While this condition can appear as a complication at any age of child-bearing life, yet most cases occur from the thirtieth to the fortieth year.

The placenta, as is well known, in a normal conception, is attached to the fundus or high up on the sides of the uterus; it is termed *prævia* when attached to the lower segment of the uterus—to that portion of the uterus which, not only during pregnancy, but after labor sets in, is stretched and distended by uterine contractions. If the placenta is attached to the lower zone of the uterus, or in the lower uterine segment, as termed by some, during gestation, as the fœtus grows and the uterus enlarges, owing to the peculiar abnormal implantation of the placenta, it often becomes detached in part and gives rise to a more or less flow of blood. It is demonstrated that in most, if not in all, cases of this form of dystocia, placenta prævia "originates from the development of the placenta within the reflexa of the lower pole of the ovum" (Hoffmier). Another theory advanced is that of primary implantation of the impregnated ovum low down in the uterus, or even over the os-internum (Hart); or "that it is the primary grafting of the ovum in the inferior third of the uterine canal" (Winckel). It is further asserted that this condition is most apt to develop in women who have had some old chronic inflammation of the mucous lining of the womb, resulting in a diseased or abraded mucous membrane. "The hypothesis I would advance is, that the human ovum can graft only on a surface denuded of epithelium, and that it does not graft in the Fallopian tubes, but in some part of the uterus removed by menstruation; hence, if the ovum does not meet with any connective tissue surface until it has passed low down in the uterine cavity, why, then some form of placenta prævia will happen" (Hart).

VARIETIES.

For convenience of description, this form of dystocia described as *Complete* and *Lateral*.

Complete placenta prævia is where the os-internum is covered by the placenta, or, as designated by Schrœder and others, "a central

* Read before the Medical Society of Virginia, September 2d, 1897, during its Twenty-eighth Annual Session at Hot Springs, Va.

implantation of the placenta." It is conceded that this form is rarely seen.

Lateral placenta prævia is where the placenta is attached to the side walls of the uterus, extending down or nearly to the os-internum, in some cases overlapping the os. This form of placenta prævia is much oftener seen; and when you feel the placenta plugging the os, as it often appears to do, after there is sufficient dilatation for your finger to pass into the cavity of the uterus, you may at first think you have a central implantation, when in most cases it is attached laterally, and simply a portion of it hangs down, apron-like, where it has become detached.

Barnes, in discussing the varieties of placenta prævia, divides the uterus into what he terms zones, viz: (1) the superior or fundal zone; (2) the equatorial or middle zone; (3) the inferior or polar zone. These zones or divisions of the uterus, for the more intelligent consideration of the subject, are separated the one from the other by imaginary, not anatomical, lines. The superior zone is the location of the placenta in a normal pregnancy. The equatorial or middle zone is the seat of lateral placenta prævia. The inferior or polar zone is the seat of the central variety or central implantation of the placenta.

Lusk, in my judgment, makes the most sensible and rational division of this subject, viz: (1) Placenta prævia centralis; (2) Placenta prævia partialis; (3) Placenta prævia lateralis or marginalis.

In the *first form*, you detect, on digital examination, where the os is sufficiently dilated, the placenta, and nothing but the placenta, directly over the os.

The *second variety* is where you detect the placental membrane, as well as the placenta itself, hanging down in some cases over or within the os, which can be pressed or diverted to one side.

The *third* is where the placenta is attached low down in the uterus, but does not extend as low as the internal os. This is the most favorable form of this disease and the one from which better results follow.

Causes.

The real and exact cause has never been settled. The condition, though, that tends to this abnormal location of the placenta is, oftener than otherwise, an old endometritis accompanied by a free leucorrhœal discharge. Again, where changes have taken place in the mucous lining of the uterus from animperfect involution, with all of its uncomfortable and distressing symptoms so often seen in the poorer classes. Also it occurs in a relaxed, enlarged, or misshaped uterus, which allow the ovum to descend too low in its cavity before it attaches itself. Where a woman has a free leucorrhœal discharge, whatever its cause, it often carries the ovum low down into the uterus before it attaches itself to the uterine walls.

For the reasons above given, this trouble is more likely to occur in multiparæ or those women who conceive late in life, the ratio being two or three to one according to some authorities; four or six as recorded by others. Another cause as given for this condition is that abortion has begun and for some reason it is arrested, and the villi have become attached low down in the uterus in the inferior zone, where fœtal development continues.

Spiegelberg, in writing about placenta prævia predisposing to abortion, says: "Owing to the loose vascular connections of the placenta, and to the higher blood pressure in the placenta when inserted low down in the uterus, any shock is liable to cause rupture of its blood vessels and detachment." Maintaining that that shock affects the lower portion of the uterus oftener than the upper during the first months of pregnancy, he argues that premature labor is more common in the early than in the later months of gestation.

Placenta prævia has a tendency to repeat itself; the cause that produced it in the first instance, not being removed, makes it likely to occur again. Twin pregnancy, it is claimed, has a tendency to develop this condition; also fibroid tumors and cancer of the uterine walls.

Clinical Features.

The first and most characteristic clinical feature of placenta prævia is hæmorrhage, accompanied by pain, which may appear at any time during the latter months of gestation, if not after labor has begun, or just as the child is expelled. In many cases, the first warning is a gush of blood, which may become an exhausting hæmorrhage, generally without pain, though in some cases I have seen excruciating uterine contractions follow the hæmorrhage, which usually checks as suddenly as it comes on, followed by more or less symptoms of shock, depending on the amount of blood lost. Again, hæmorrhage may be induced by exercise, stooping, straining at stool, fright, anger, any cause that brings about nervous excitement; the act of coitus has brought on hæmorrhage under these conditions. When hæmorrhage is due to such causes, it is termed unavoidable hæmorrhage. In both lateral and central implantation we are apt to meet with this symptom only

during the latter months of pregnancy, when, owing to the growth of the child and the corresponding increase in the size of the womb, portions of the placenta are pulled away from their attachments—thus leaving the mouths of the blood vessels open, with nothing to plug or compress them—the amount of hæmorrhage depending on the extent of the uterine surface denuded.

I affirm that, while hæmorrhage is oftener met with during the latter days of pregnancy, generally from the thirty-second to the thirty-sixth week, yet it may be the first warning of impending labor, and uterine pains only assert themselves after the hæmorrhage is checked. If the hæmorrhage is exhausting, and has been followed by shock and collapse, the uterine pains, though present, may be so slight and inactive that inertia of the womb may result, so that manipulative and instrumental interference has to be resorted to in order to terminate the labor.

Two theories have been advanced as to the source and cause of hæmorrhage in placenta prævia. Most of the authorities claim that the source of the hæmorrhage is *uterine;* others that it is *placental;* while it seems to me it might be both, yet, from my observation and readings, I lean to the uterine source of hæmorrhage.

Now, as to why the bleeding oftener occurs towards the close of gestation, there are also two views held by different authorities, many of whom are distinguished, and advance most plausible theories for their side of the argument. One is, that the lower segment of the uterus grows and develops faster than the placenta, which causes its detachment, and we have uterine hæmorrhage, which I believe is the true explanation. The other is, that the placenta grows more rapidly than the uterus and pulls away from the uterine walls, leaving a denuded placental surface, and we have placental hæmorrhage. It remains for some one to demonstrate which of these theories is the correct one.
theory we shall accept as the real and true cause of placenta prævia hæmorrhage.

Hæmorrhage, which is the only practical symptom of this trouble, comes usually without pain or warning. I have seen, though, the hæmorrhage followed by profound shock and excruciating uterine pains and contractions, which were only relieved by morphia hypodermically. My limited experience is, that this hæmorrhage, when it once occurs, returns at stated intervals. In some cases, there has been a slight "show" for days at a time; then again practically all the time, just enough for the woman to wear a napkin; yet the hæmorrhage has a tendency to return, and usually with increased power and danger to the patient. The certain and only positive evidence of placenta prævia is, when the os is sufficiently dilated to admit of a digital examination when you feel the soft, sponge-like placenta. It is not wise to resort to this diagnostic evidence unless you are ready and prepared to meet all emergencies and to deliver your patient at once. The cervix is very thin, and very richly endowed with blood vessels; this is also the case with the lower portion of the uterus and vagina. At this stage, yoh can generally diagnose the type of the disease you will have to contend within, whether complete or lateral; or central, partial, or marginal.

Prognosis.

Every woman in whom this condition is recognized should be watched with eternal vigilance, for the death rate is high, both of mother and child; and when both are saved, all parties concerned deserve congratulations, and especially the plaudit "well done, good and faithful servant" should be given the attending obstetrician, who, appreciating the danger ahead, calmly but courageously lies down to sleep at night with his armor on, anxiously waiting, fearing that every ring at his bell or knock at his door will bring him the summons that Mrs. —— is bleeding to death. The danger is great, not only prior to and during labor, but just as the child is born. Secondary hæmorrhage also is likely to result several hours after labor, due to the loss of contractile power of the uterus. Hence every woman should be watched for several hours after labor that is complicated with placenta prævia, for many a patient has sunk into fatal syncope after delivery, brought on by profound shock combined with a weak heart, the result of excessive hæmorrhage. Sepsis also adds largely to the death rate. The maternal mortality ranges from twenty to twenty-five; fœtal mortality from fifty to sixty per cent.

Treatment.

In considering the treatment of this disease only principles can be laid down, as each case must be a guide to itself, for you will find that many symptoms peculiar to each individual case arise that will demand special consideration, and which may modify to some extent at least any line of treatment that is advocated.

In the beginning I lay down this broad proposition, which I feel confident no one will

gainsay, that the life and welfare of the mother should first be considered, and secondly, that of the child. If one has to be sacrificed, it must be the infant. In the conduct of a case of placenta prævia, if it is possible, tide the pregnant woman over to the seventh month, and then, if necessary for the mother's welfare, produce premature labor. In many cases this has been done and the lives of both mother and child have been saved, for at this period, unless the mother's system has been reduced and impoverished by sickness and disease, the child is what we term at a viable age—many of whom, though born feeble and but poorly developed, have been reared to a strong, vigorous maturity.

Should hæmorrhage appear, whether excessive or not, at any period of pregnancy, advise rest and quiet in the recumbent position, unload the lower bowels with hot water enemata, direct a hot vaginal douche daily, to which you may add any of the antiseptic solutions, such as borolyptol, creolin, carbolic acid, etc.; give fluid ext. black haw in teaspoonful doses every three or four hours. I often add from five to ten drops of ergot to tone up the uterus, and use opium in some form, usually a morphia tablet one-eighth to one fourth grain, to soothe and quiet the patient, and continue it in safe doses until I get its soothing and quieting effect on the general system as well as that of the uterus. If, despite your efforts to control hæmorrhage, it continues, and you see the woman's strength failing, the nice and difficult question to decide is, when are you justified in producing premature labor? I allowed to go on, nature often terminates this condition, with less risk certainly to the mother, and often to the child, than if manual interference is resorted to. Of course the extent of the hæmorrhage, the strength and condition of the mother, and the age of the fœtus, *are all points* to be considered in determining the line of treatment that you should pursue. Often after a severe hæmorrhage, accompanied with considerable shock, when the physician arrives the hæmorrhage has ceased, he realizes how rapidly and how well nature will repair this loss. By proper treatment the woman will soon regain what she has lost; hence it is a nice point to decide whether to go ahead and precipitate labor, or *wait;* therefore, I affirm, each case must be a guide to itself, and it resolves itself into simply a question of judgment.

On the other hand, if, on arriving at a patient's bedside and the hæmorrhage is still going on and the woman's strength is flagging, you then will be justified in resorting to heroic measures. I would first of all tampon the vagina as tightly as I could, with the aid of a Sim's speculum, for it can be done much better with the speculum, using for the tampon small balls of absorbent cotton, of course aseptic cotton, if it can be procured, and pack the vagina *tightly.* Just here I want to say that when you know you have a case of placenta prævia your obstetrical bag should be fitted—ready with every instrument and appliance that you may need for a rapid, *aseptic,* and *instrumental* delivery. In addition, you should keep at the patient's house those things needed in case of great emergency; for you can't tell what hour they will be needed, and badly needed, for the mother's life may be sacrificed by the delay in sending for them. The tampon can usually be left in from two to twenty-four hours, the pains and hæmorrhage being your guide as to when to remove it, unless the hæmorrhage persists in spite of it; but even if it does, this can't be much if the vagina is tamponed properly—I mean *tightly.* But should the hæmorrhage start up afresh after the tampon has been in situ for several hours, you may then know that dilatation of the os has been effected. Then remove your tampon and proceed to deliver your patient as rapidly as possible. Rupture the membranes—this facilitates labor; perform podalic version or use the forceps; if necessary resort to that mode by which you can most quickly empty the uterus and check the hæmorrhage.

Suppose you meet with a case where the os does not dilate readily and the hæmorrhage persists in spite of the tampon, then you must resort to rapid dilatation, using a steel dilator at first until you can get your finger into the os-uteri, which is the best and safest dilator to use, and then stretch with Barnes' dilators sufficiently to admit you hand. If the placenta has adhered on the margin of the os or laterally, as soon as the head is engaged the hæmorrhage will usually cease; so break the placenta loose from its attachments or carry it to one side, rupture the membranes and allow the head to engage. If the placenta is really a central implantation, you are justified in tearing, if necessary, through it, break up its attachments and deliver first it, and then endeavor to engage the head or whatever part is presenting, that it may act as a plug or compress and stop the bleeding. Of course, all this manipulation in the vagina must be done as aseptically as possible, or rather, the operator must use *clean hands, clean dressings,* and *clean instruments.*

The tampon is not looked upon with favor by some authorities; they claim that it is slow;

that it increases the risk of infection, and that there is danger of concealed hæmorrhage. They advise you to watch with vigilance and wait for something to happen, leaving nature to slowly dilate the os.

I am firmly of the opinion that if a tampon of aseptic material is used, and the vagina is douched with an antiseptic solution, and the operator's hands and instruments are clean, there is but little danger of infecting the woman; and certainly dilatation of the cervix will be hastened by the presence of the tampon; and should hæmorrhage occur or continue, it has a tendency to clot the blood, which, by pressure, has the effect of checking the hæmorrhage.

Case.—To illustrate, Mrs. B. conceived about November 20, 1896. Not until the second month was she aware that she was pregnant, when she suffered slightly from twinges of nausea. Her first pregnancy was a trying one.

Labor long and difficult, had to be delivered with instruments, resulting in a ruptured perineum, which was not properly repaired, followed by endometritis.

The second pregnancy was complicated with placenta prævia; there was no tendency to hæmorrhage until toward the close of gestation, but she went to full term and was delivered without any trouble.

The third pregnancy resulted in an abortion about the third or fourth month.

The fourth pregnancy was also an abortion.

In the fifth pregnancy, she went to full term. and was delivered of a small child; nothing unusual about this labor.

The sixth conception, when she became my patient, resulted in an abortion about the fourth month; she made a good recovery.

The seventh conception resulted in the birth of a dead infant about the sixth month, from which she recovered without any untoward symptoms. I give this meagre and incomplete history to show the tendency, and by it to prove the causes and theories I have advanced as evidence of this complication—*placenta prævia.*

I come now to the eighth conception of my patient. At the second month she had a hæmorrhage, not enough to weaken or alarm her or to give me any concern, but a decided hæmorrhage which by rest and quiet soon passed off with a slight flow for several days. At the third month there was another hæmorrhage, with a slight discharge for several days, which repeated itself with increased force at the fourth month, with but little flow between these dates; this was readily controlled by rest in bed for a few days, the patient doing fairly well for the next month, though practically confined to the house and most of the time to her room. Appreciating the danger she was in, I advised absolute rest and quiet, which she religiously observed.

At the beginning of the fifth month, I was hurriedly called to see her one evening; found her profoundly shocked, cold and clammy, with a feeble pulse; she had had a profuse hæmorrhage, just *one gush* (which was brought on by nervous excitement from having to correct and reprove one of her children who had disobeyed her), and suffering intensely when I reached her bedside with severe uterine cramps, alternating with an excruciating pain in the top of her head, which I regarded as reflex. With morphia $\frac{1}{4}$th gr., atropia $\frac{1}{150}$th grain hypodermically for the pain, and strychnine $\frac{1}{30}$th grain hypodermically, milk and whiskey by the mouth and rectum, and hot water bags to her feet, which were cold, she rallied in about an hour. On digital examination, I found the hæmorrhage had checked as suddenly as it came; hardly enough discharge was in the vagina to stain my finger; cervix, which I found soft and pliable, was only open enough to admit the end of my index finger. I gave her fluid extract viburnum prunifolium in teaspoonful doses every three hours, and morphia as indicated; directed perfect quiet and a diet of milk and bovinine, which had formed the greater part of her diet for several months, hoping all the time that labor would set in and terminate my anxiety, but such it would not do. I made preparation to meet every emergency, made my tampons of absorbent cotton, sterilized water in abundance; had antiseptic solutions ready (creolin, carbolic acid, bichloride of mercury tablets, etc.). My obstetrical bag was fitted with every instrument that I thought it was possible to need, even to Goodell's steel dilator for rapid dilatation; had aspirating needles, syringe and apparatus for transfusion, to be used in the rectum, deep cellular tissues or vein, depending upon the urgency of the case; also ergot, ergotole, strychnia, morphia and atropia; ice, hot water, chloroform and whiskey, all of which I kept in her house ready for use for two months. She soon rallied, spent a good night, and, while weak, the next morning was comfortable, with no sign of hæmorrhage.

I made, as you will see, every preparation to induce premature labor, yet she seemed so comfortable, and I was so anxious to tide her over to the seventh month, when I hoped the child would live, that I decided to watch and wait.

I left a most competent nurse with her, whom I directed to tampon the vagina and send for me without delay should hæmorrhage begin again. She rapidly made blood, and in a few days was doing well. A flow about as much as appears during menstruation made its appearance in a few days, and continued more or less, not enough to weaken her though, until the sixth month, when she had another hæmorrhage, which was readily controlled, not so severe as the one that occurred at the fifth month. She continued to do fairly well during this, the sixth month of conception—the flow continuing more or less, enough for her to wear her napkin, stopping at regular intervals for twenty-four or thirty-six hours and beginning again.

This state of affairs continued until July 1, 1897, when she had another hæmorrhage, though not severe, which was readily checked. On examination, I found the cervix, for the first time, dilated and open, and dilatable. I could readily feel the placenta, not plugging or attached to the os internum, but hanging directly over the os. Fortunately labor set in; dilatation continuing; no hæmorrhage. Labor progressed favorably, but slowly; in a few hours the head descended and the bag of waters formed, at which time the placenta must have been shoved to one side, for it no longer could be detected. After dilatation was complete, which I assisted with a little chloroform because the pains were severe and wearing, I ruptured the bag of waters and labor then set in in earnest, and in a short while she was delivered of a very small and puny infant with only two expulsive pains. As the child was expelled there was profuse hæmorrhage; so I, as quickly as possible, with one hand on the abdomen kneading the uterus, took away the placenta and clots, the uterus being filled with them. The uterus contracted down firmly and well, and no evidence of hæmorrhage appeared thereafter. No douches, vaginal or uterine, were used; the patient and bed were simply kept scrupulously clean. She made a good recovery in about a month, with no evidence, at any time, of sepsis, and is now doing well for her, having always been frail and delicate.

The infant was poorly developed, puny and very thin, succeeded in making it breathe after a minute or two; immediately it was wrapped in absorbent cotton an inch thick, over this several layers of flannel, and was put in a room the temperature of which was kept at eighty degrees, and fed upon condensed milk, giving it about two drachms, properly diluted, every hour and a half. This, diet, of course, was modified as the child grew and developed, and it is now doing well. The mother was practically in bed for the last three months of this pregnancy, and lived on a liquid diet all this time.

I expect to be criticised for the conservative management of this case, and feel sure many will say I ran great risk to the mother, and that I should have produced premature labor certainly at the fifth month; yet the result in saving both mother and child is the endorsation I offer of the judgment displayed, and I come back to my original proposition, laid down in discussing the treatment of placenta prævia, that each case has to be considered from its *own* peculiar environments, and the treatment resolves itself into a question of judgment at last.

The uniqueness of this case is that it so well illustrates the causes and theories advanced, and the picture drawn of this disease. The chief clinical feature of interest I claim for it is, that hæmorrhage began the second month of pregnancy, which is very rare, and I at this early date diagnosed *placenta prævia*, and carried my patient to a successful delivery, saving both mother and child.

102 *West Grace Street.*

Discussion.

Honorary Fellow, Dr. Joseph Taber Johnson, of Washington, D. C., said that Dr. Irving's paper was altogether too valuable, and the subject was far too important, to go by without any discussion. So many mothers and children are lost when the placenta is previa, that as the essayist has said, every family physician should have very clearly defined ideas in regard to the management of these usually sudden and very alarming cases. While the principles of treatment are always the same, Dr. Johnson agreed with Dr. Irving that the details might vary according to the symptoms presented in individual cases. He congratulated the Doctor upon the favorable termination of the case reported, where the diagnosis was made in the second month, and notwithstanding several severe and exhausting hemorrhages, he finally succeeded in delivering a live child from a live mother.

Dr. Johnson wished to direct special attention to the fact, however, that no woman was safe for a moment with placenta previa. Both she and her unborn child had suspended over their heads a veritable sword of Damocles, hanging by very brittle thread. No man can tell when a second and fatal hemorrhage may

take place, and he thought that the indications for immediate treatment in these cases were as plain and as important as if the patient was suffering from malignant disease. He thought the best interests of the mother and the child would be subserved if premature delivery were practiced in all cases as soon as the diagnosis was unmistakably made. Too many women have already been sacrificed to the doctrine of delay, and he thought that as soon after the diagnosis as possible a time should be appointed, and all the necessary arrangements made, with the same deliberation and attention to antiseptic detail as if an ovariotomy or hysterectomy were to be done and the patient prematurely delivered.

As hemorrhage is the chief danger in these cases, as soon as this danger is eliminated the active steps in the process of delivery may be generally arrested with safety and the case left to natural processes.

Dr. Johnson recommended that podalic version should be practiced by the Braxton Hicks method of combined external and internal manipulation. One or two fingers in the cervix, aided by the other hand applied externally, would nearly always succeed in turning the child, and one leg of the fœtus could be hooked down with the fingers, and the cervical canal would be actually tamponned with a part of the body of the child. In this way the pressure of the presenting part would prevent farther hemorrhage, and this chief danger being eliminated, a case might be safely left to nature, the doctor sitting by of course, as in other cases of labor, waiting and watching. Recent statistics, he thought, would show more successful deliveries by this method than any other. He knew that the excitement and alarm in any household, where a severe hemorrhage occurred, was very great, and that the temptation was to proceed with great energy and rapidity to the delivery of the child, but he thought that the hasty and excited passage of the hand and arm up through the undilated, vascular, and undilatable cervix, was responsible for much injury and not a few deaths which might have been prevented by adopting the Braxton Hicks method.

Conversational Pitfalls.

Miss Meadowsweet—Excuse my ignorance, but ought I to call you Mr. Squills or Dr. Squills?

The Doctor—Oh, call me anything you like. Some of my friends call me an old fool!

Miss Meadowsweet—Ah, but that's people who know you intimately!—*London Punch.*

NINETY CASES OF HYSTERECTOMY, WITH REMARKS ON METHOD AND TECHNIQUE.*

By JOSEPH TABER JOHNSON, M. D., Washington, D. C.,

Honorary Fellow Medical Society of Virginia, etc.

Of the ninety cases reported—

13 were vaginal hysterectomies for cancer, with	2 deaths
3 were vaginal hysterectomies for pus, with	0 death
34 supra-vaginal hysterectomies for fibroids, in which the stump was treated by the Koeberlé wire externally.	4 deaths
40 were Baer operations for fibroids, with	1 death
90	

In addition, the author reported—

4 pan-hysterectomies—2 for fibroids, 2 for cancer, with	0 death
4 myomectomies for fibroid tumors, with	0 death
34 salpingio-öophorectomies for growing fibriods, with	0 death
132	7

Thus he has performed a total of 132 operations for fibroid tumors and cancer of the uterus with seven deaths, or a total mortality of $5\frac{3}{10}$ per cent.

The three last items were added to his list of ninety cases; for while they were not hysterectomies, still they were operations done for the relief of growing and bleeding fibriod tumors of the uterus.

In tracing the history of hysterectomy for fibroids, the doctor stated, with much pride, that the world was just as much indebted to America for this operation as it was for ovariotomy. Dr. Gillman Kimball, of Lowell, Mass, performed the first supra-vaginal hysterectomy September 1, 1853, deliberately and intentionally, after making a clear diagnosis of fibroid tumor. He had, however, on June 26th of the same year, assisted Dr. Walter Burnham, also of Lowell, in an operation for the removal of a tumor which had been diagnosed ovarian. It turned out to be a fibroid. The tumor was expelled through the abdominal incision during an attack of vomiting, and as Dr. Burnham could not get it back into the abdomen, he was compelled to remove it. His patient, fortunately recovered, constituting the first successful hysterectomy for fibroids which had ever been performed, though done as a necessity under a mistaken diagnosis.

Attention was directed to the pioneer work

* Reported to the Medical Society of Virginia during its Twenty-eighth Annual Session at Hot Springs, Va., September 2, 1897. The author spoke from notes—not having had opportunity to write out a paper. Hence the form of report.

of Atlee, of Pennsylvania, who for the succeeding twenty-five years did much toward establishing this operation upon a firm foundation.

Much of the work of developing this remarkable operation has been done by American gynæcologists.

Emmet was the first, in 1884, to cover over the stump of the cervix with peritoneum.

In 1887, Eastman, of Indianapolis, covered the stump with flaps of peritoneum, but before doing so, burned a drainage canal down through the cervix into which he placed a rubber drainage tube.

In 1888, Dr. Mary Dixon Jones performed the first pan-hysterectomy ever deliberately done in America for fibroids.

In 1889, Dr. L. A. Stimson, a general surgeon of New York, made a great improvement in the operation, by ligating both the ovarian and uterine arteries before proceeding to the actual work of the removal of the tumor, thus making it an almost bloodless operation.

Operators, up to this time, had ligated all the vessels and branches which they had cut in the process of removal, making it not only a very bloody operation, but one which was frequently followed by fatal primary as well as secondary hæmorrhage. The mortality of hysterectomy for fibroid tumors was still discouragingly high.

The ligation of these four arteries, however, in their course, and especially the uterines back in the cellular tissue from the uterus, was a great step in advance in the evolution of this beneficent operation. After the adoption of this method, the temporary constriction by the elastic ligature was found to be unnecessary, and most operators who had previously been using the wire constrictor of Koeberlé in the external constriction of the stump, abandoned this method and began to perform supra-vaginal and pan-hysterectomy by a combination of the methods suggested by Stimson, Eastman, Marcy, Jones, and Emmet. Joseph Price, of Philadelphia, however, who has had such marvelous success in the treatment of the stump externally, by the wire constrictor, still continues to use that method with the same success as formerly. Polk and Krug, of New York, prefered to do total extirpation of the uterus somewhat after the method suggested by Stimson in the majority of their cases, rather than the supra-vaginal operation. About this time, Byford, of Chicago, devised a method by which he turned the stump and ligated vessels into the vagina. In 1888 and '89, Eastman made still further additions to the operation which have been frequently described. Drs. Goffe and Dudley, of New York, reported successful cases in which they sewed together the anterior and posterior flaps of peritoneum above the stump. It was still insisted that drainage of the retro peritoneal stump and the space between the folds of the ligated broad ligaments was necessary, and openings were made by some for drainage tubes through the cervical canal, and by others with gauze through a puncture back of the cirvical stump into the vagina.

Kelly, of Baltimore, and Pryor, of New York, have also done good work in the evolution of hysterectomy. The former operated by a process which he calls "hysterectomy by continuous incision, from left to right or from right to left," by which he claims to have greatly shortened the time required for the performance of the operation. While the tumor can be more rapidly removed by his method, it is very doubtful if the *entire operation* can be *completed* up to the insertion of the last stitches, in any less time, than that required by an expert to complete what is now known as the "Baer operation." Pryor's method, which he described in 1894, had for its object the eneucleation of intra-ligamentous fibroid tumors from below upwards, after having opened up the broad ligament.

Dr. Charles P. Noble, of Philadelphia, in a paper upon "The Development and Present Status of Hysterectomy for Fibro-myoma," which he read to the American Gynæcological Society in Washington, May, 1897, makes the following reference to Dr. Baer, and the great influence of his work in the development and perfection of hysterectomy:

"The point of chief value in the technique employed by Baer is that he securely ligated both the ovarian and the uterine arteries in their course through the broad ligaments. In this he applied the principle worked out by Stimson, except that he substituted the mass ligature for the isolated ligature of the vessels. Baer's paper has had great influence in popularizing hysterectomy. It was a practical answer to the great fear of primary and secondary hæmorrhage from the cirvical stump. He placed no ligatures or sutures in the cervical tissue, and yet no hæmorrhage followed. This was a practical and complete demonstration that ligature of the trunks of the uterine arteries can control hæmorrhage as well in supra-vaginal amputation as in total hysterectomy. He neither disinfected nor drained the cervical canal, but the good results which he obtained, especially when considered in connection with the more recent studies of the

contents of the cervical canal from a bacteriological standpoint, are a very satisfactory answer to the fear of infection from the cervical canal entertained by Schrœder and his disciples.

"The chief value of Baer's work consists, not in adding new steps to the technique of hysterectomy, but in omitting some of them, and also in a thorough appreciation of the fact that a mass ligature placed low down in each broad ligament, securing the uterine arteries, can thoroughly control the blood supply to the cervix This, of course, is merely applying to supra-vaginal amputation, the work of Stimson in total hysterectomy.

"In addition, Baer was the first to grasp the fact that the way to prevent sloughing of the cervical stump is to leave it alone. He neither burned it with the cautery, devitalized it with strong antiseptics, nor strangulated it with tightly-placed sutures. He utilized the work of Emmet, Eastman, Dudley, and Goffe, in making the stump retro-peritoneal; and the work of Stimson in securing hæmostasis by ligatures placed in the connective tissue of the broad ligaments. The chief fear of the older surgeons in operating upon the uterus was secondary hæmorrhage. They believed that uterine tissue has the peculiar property of not being amenable to ligation; that some hours after a ligature is well placed in uterine tissue, it will become loose, and permit secondary hæmorrhage to take place. Through Baer's work this view has become ancient history."

There has been no desire to overlook or to belittle the work of European surgeons in the brief outline of the history of hysterectomy just stated. The object of the speaker was to draw attention to the historical fact that hysterectomy as well as ovariotomy originated in the United States—one in Danville, Ky., by McDowell, in 1809, and the other in Lowell, Mass., by Kimball, in 1853. Others had already traced the history of the growth of this operation abroad—indeed, the operators themselves were not generally slow in calling public attention to their claims for priority in the suggestion or practice of this or that fancied improvement in the instruments required or in their method of using them.

The great work of Schrœder in building up this operation in Germany was acknowledged, also that of Kœberlé, in the suggestion of the Serre-neud for the external constriction of the pedicle, also the splendid work of Hegar and Kaltenbach, Martin, Chrobak, Olshausen, and others in Germany; Pean, Segand, Doyen, in France; Keith, Bantock, Thornton and others, in England. The British operators have been especially noted for their adherence to the clamp and wire treatment of the pedicle externally, while the method most prevalent in France has been the morcellation of fibroids and their removal, piece-meal, with the uterus and appendages, when possible, through the vagina.

The operation of Doyen, of Rheims, is so remarkable that a brief description of it may be of interest. Dr. E. S. Lewis, of New Orleans, in his presidential address at Nashville, November, 1896, before the Southern Surgical and Gynecological Society, says of this operation:

"Perhaps in the enucleation method, as practiced by Doyen, the perfection of hysterectomy for fibroids has been attained, if confirmed by the experience of others. His published report of thirty-four cases, with thirty-four recoveries, is a flattering testimonial of its merit, and establishes its claim to the favorable notice of the profession. As no description of this method has appeared as yet, to my knowledge, in the medical literature of this country, I may be pardoned for outlining his procedure. The abdomen is opened with the patient in the Trendelenburg position. The tumor is eventrated and lifted over the pubis. The Douglas pouch is opened upon a guide pushing it up through the vagina, and the incision enlarged to the sides of the cervix. The posterior lip is then raised and lateral attachments of cervix short of vessels divided. The anterior lip is now seized and lifted up, the vaginal fornix in front is opened, and the uterus peels from the bladder without danger of injuring the ureters. The index finger is then introduced in the abdomen behind the pubis, and the lower border of the broad ligaments seized between it and the thumb, and the utero ovarian arch isolated. The broad ligament is now divided from cervix to fundus, closely shaving the uterine border. The uterus, rapidly drawn to the right side, partially unrolls from its serous envelope, and the left ligament is similarly divided, blunt-pointed scissors being used during the operation. The flaps then exposed are inspected, the vessels ligated, and the ovaries and tubes excised.

"The bleeding is trifling," he states, "and easily controlled. The peritoneo-vaginal section behind is sutured with catgut, which represses all oozing. The ligaments are then drawn into the vagina, and a double ligature carried around them, which almost completely closes the cavity. The stumps and ligatures are in the vagina, and can be made aseptic.

He claims for this method simplicity, rapidity of execution, and greater safety, as in 147 operations for very large fibroids the mortality was but 4.7 per cent. Furthermore, he states that it is suitable to every case, however complicated and whatever its nature, and as it can be performed more quickly than by any other method, is attended with correspondingly less risk."

Dr. W. B. Perry, of Baltimore, in the August number of the *American Journal of Obstetrics*, describes in the following language a modification of this operation by Dr. Leopold Landow, of Berlin, which leaves the raw surfaces in the abdominal cavity covered over by the united peritoneal flaps in about the same condition as in the perfected Baer operation:

"The patient is placed in the high Trendelenburg position, abdomen opened, a flat piece of sterilized gauze or towel placed behind the uterus, separating the abdominal from the pelvic cavity. Tumor is elevated and drawn over the symphysis pubis and held by an assistant. The posterior cul-de-sac is now opened from above, cervix drawn backward into abdominal cavity, bladder separated, and anterior cul-de-sac opened as in the Doyen method. The uterus is now suspended by the two lateral ligaments only, and an assistant firmly grasps one of the broad ligaments between the first two fingers of his hand (left hand for right side, right for opposite); the ligament is cut through parallel to and as near the body of the uterus as possible. After the ligament is severed, the fingers grasping its distal end are allowed to relax somewhat to detect spouting blood vessels (usually only two on each side); these are caught up separately and tied with catgut. Should venous bleeding occur, it may be handled in the same way. The other side is treated in a like manner. The two peritoneal layers are now inspected, and if no bleeding be present, the vessels are folded between the peritoneal folds of the wound, the edges of which are brought together by a continuous gut suture, commencing at the upper border of the divided right broad ligament, and carried down its edge to the vaginal opening; at this point, the suture includes not only peritoneum, but also the severed vaginal wall, bringing the closed outlet in direct contact with the peritoneum above, thus forming a secure support for the vagina. The suture is next carried through the peritoneal layers at base of left broad ligament, and up its divided surface until all the denuded area has been covered, thereby completely closing the pelvic cavity. When aseptic precaution has been observed, drainage is unnecessary."

Proceeding to the technique of supra-vaginal hysterectomy, the speaker stated that so much had been said already in description of "Baer's method," that further details were hardly necessary.

In general, he would say that the operation, as now performed so successfully, would have been hardly possible before the introduction of asepsis and the Trendelenburg position—thus its evolution has proceeded—the credit of the present almost perfect operation is not solely due the genius of any one man, or hardly to one generation of men, but to an intelligent combination of methods and to recent advances in the practice of abdominal surgery.

A comparison of the results of total hysterectomy for fibroids with supra-vaginal amputation shows the mortality of the former to be nearly double that of the latter.

The tables of Olshausen, published in Veit's *Handbuch der Gynakologie*, 1897, p. 713, show 806 supra-vaginal amputations by 19 different operators, with 45 deaths, or a mortality of $5\frac{6}{10}$ per cent., and 520 total extirpations, with 50 deaths, or a mortality of $9\frac{6}{10}$ per cent.

Noble, in his paper above referred to, reports 345 supra-vaginal amputations for fibro-myoma by five American operators, with 17 deaths, or a mortality of $4\frac{9}{10}$ per cent.

In 1895, Dr. Johnson read a short paper upon "eighteen hysterectomies by the Baer method," before the Southern Surgical and Gynæcological Society, in which he stated "that from 1874 to 1894 many changes in technique, including asepsis, the Trendelenburg position, the intra-pelvic but extra-peritoneal treatment of the pedicle, the closure by suture of the separated edges of the broad ligament, drainage when necessary through the vagina after total extirpation, have all had their share in diminishing the mortality from 85.3 per cent."

In the June number (1895) of the *Annals of Gynæcology*, Cushing publishes a report of 1670 Supra-pubic hysterectomies by American operators, with a mortality reduced to $13\frac{8}{10}$ per cent. By reference to Noble's paper, May, 1897, it will be seen that the mortality by American operators is still farther reduced to $4\frac{9}{10}$ per cent.

The preponderance of evidence was clearly in favor of the supra-vaginal amputation.

Vaginal hysterectomy for fibroid tumors has been performed much more frequently in Paris by Péan, Segand and Richelott, and in Brussells by Jacobs, than in the United States. They operate on tumors reaching as high as the umbilicus. Their technique has been too frequently described to burden this Society with its mention here. Morcellation of the tumor,

and the subsequent removal of the uterus, has been very successful in their hands. Polk, Boldt, Edibohls, and others of New York, have made favorable reports of operations by this method upon small tumors situated low down in the pelvis or inside of a dilatable uterus, but it is unlikely that it will ever become a formidable rival of supra-vaginal hysterectomy in this country.

Salpingo-öorphorectomy for the arrest of the growth and hæmorrhage of fibroid tumors was performed thirty-four times in the list of cases presented with no mortality whatever, and so far as heard from, with permanent success. It is well known that this operation is only applicable to small tumors which are not larger than a cocoanut. After attaining a large growth their greater vascularity from adhesions, and their own increased blood supply, becomes too much to be controlled by the ligation of the ovarian arteries and the arrest of menstruation. This operation is now estimated to be permanently successful in only the same ratio of cases as are cured by the normal change of life, and as so many fibroid tumors are known to grow and to present some of their worst symptoms, after the menapause, there is little choice between removal of the appendages and supra-vaginal hysterectomy. Indeed, as the removal of the tumor produces a radical and complete cure with its present reduced mortality, it should be recommended as an operation of election. In the same class of small growths it is doubtful if the mortality would be at all increased, while the after condition of the patient would be vastly improved both mentally and physically.

Dr. Johnson then submitted a plea in favor of earlier operations. He argued that the mortality could probably be reduced to one-half its present low rate of 5 per cent., by operating before the patient had reached an advanced age, with lessened vitality from long-continued suffering, apprehension and loss of blood. There being few or no adhesions, the difficulty and danger of removal would be less. The heart, kidneys and digestive organs would be in a better condition, and the recuperative powers of the system would be better able to withstand the shock of removal.

We cannot longer promise these sufferers that the change of life will bring them relief. Some operators have recently reported that nearly half their hysterectomies for fibroids were upon women over fifty years of age.

As more is learned of the growth of these tumors, the views of gynæcologists are undergoing a change in regard to their benign nature. It was at one time taught that, while they might be very troublesome, they were not especially dangerous, that no one ever actually died as a result of their presence. It is now very well known that many of the cases formerly reported to Boards of Health as having died of peritonitis, cystitis, nephritis, intestinal obstruction, general exhaustion, blood-poisoning, etc., really died because and only because they had long suffered from fibroid tumors.

Dr. Johnson presented a specimen at this point in illustration of his foregoing remarks, which he had removed a few days previously from a lady 57 years of age, who had suffered with it for twenty years. She had been denied an operation several times, and had been told by her medical advisers she would have no further trouble from it after the menapause. It had undergone calcareous degeneration, was very rough and hard as a stone. The patient would probably have been reported to the Board of Health as having died of peritonitis.

These degenerations after the menopause are much more frequent than formerly supposed, and constitute an important indication for earlier operations.

Noble, in 66 supra-vaginal hysterectomies, reports that *the following degenerations and complications were encountered:*

Cystic degeneration	3
Sarcomatous degeneration	3
Calcareous degeneration	3
Necrosis of the tumor	2
Bi-lateral hydro-salpinx	4
Unilateral hydro-salpinx	4
Bi-lateral pyo-salpinx	4
Unilateral pyo salpinx	2
Unilateral ovarian cyst	4
Bi-lateral dermoid ovarian cyst	1
Par-ovarian cyst	1
Ovarian cyst, ruptured tubal pregnancy and appendicitis, each	1
Intra ligamentous development of the tumor	6

A review of this table indicates that twenty of these women would have died as a result of degeneration in the tumor itself, or of the complicating disease of the tubes and ovaries. It is difficult to estimate the number that would have died directly or indirectly from hæmorrhage; from chronic anæmia, the result of hæmorrhage, and from intercurrent diseases, the result of malnutrition. It is a safe statement that from twenty to twenty-five of these women would have died as a result of their disease; that is, from thirty to thirty-eight per cent. Thirteen women, or twenty per cent., had

passed the usual period of the menopause, when, according to traditional theory, they should have been relieved of their symptoms or their tumors should have atrophied.

Seven cases of malignant disease, some of which were not operated upon, have been observed. This indicates that malignant disease may be a more frequent complication of fibroid tumors than is usually believed. Seven cases of necrosis occurred among the operative cases, and many others have come under observation.

Young women, who are not operated upon, must run the risk of pregnancy and labor complicated by a fibroid tumor. It was predicted that the evolution of this subject would not be complete until myomectomy should be developed into the operation of election for child-bearing women in cases where the situation of the tumor permitted. If one or both ovaries could be preserved and the cavity of the uterus not invaded by the surgeon in his work of removal of a favorably situated tumor, the enforced menopause and a disagreeable train of nervous symptoms would be thereby avoided.

If the crowning glory of womanhood was motherhood, then the crowning glory of gynæcology should be an operation which would make motherhood possible instead of impossible.

1728 *K Street, N. W.*

A SUBSTITUTE FOR WHITEHEAD'S OPERATION FOR HÆMORRHOIDS*.

By S. T. EARLE, Jr., M. D., Baltimore, Md.

In the *International Clinics* for 1896 I reported a clinical lecture under the above caption, in which I expressed to the students very similar views to those found in this paper. More extended use of this method, with some changes in its technique, have confirmed the opinion therein expressed, that it is a most satisfactory substitute for Whitehead's operation, and is applicable to nearly, if not all, cases that were supposed could be met only by that operation.

The collection and tabulation of the bad results that are likely to follow Whitehead's operation by Dr. Edmund Andrews, of Chicago, as reported in *Matthew's Medical Quarterly* for October, 1895, was a timely warning to those who practiced it. It clearly demonstrated the fact that, as such bad results had frequently followed in the hands of even the best surgeons, so they are likely to happen to any one, and it has made me, for one, much more careful in performing the operation, and much more observant of the results obtained.

In spite of this care, and in a case where I can offer no good excuse for its occurrence, I have had one such accident to occur in my own practice since the publication of Dr. Andrew's paper, and have seen another this year, that followed a similar operation done by a most careful and excellent surgeon. In my case, without the occurrence of the slightest stricture, there is incontinence of flatus, mucus and feces, from disarrangement of the tactile mechanism of the parts. In the other case, similar symptoms resulted, but the case is accompanied with a slight stricture directly over the external sphincter.

Although I have done Whitehead's operation many times, and in some instances have gotten most satisfactory results—such as in one case that I remember, almost complete union of the cut surfaces by the eighth day, and the patient out by the ninth—yet, after my experience with the two cases cited above, and with the excellent results that I get with the method of operating I now propose, I will not be likely to try it again.

As there are two distinct sets of vessels involved in internal and external hæmorrhoids, the portal and systemic—the first supplying the mucous membrane, the seat of the internal hæmorrhoids, the latter supplying the skin around the anus, and the subjacent adipose tissue directly beneath, the seat of external hæmorrhoids—it is perfectly easy to deal with them separately, and to leave intact the intervening tissue. As I also deal with each internal hæmorrhoid separately, by this plan leaving intact strips of uncut mucous membrane between each hæmorrhoid that is removed, there is no probability, or scarcely any possibility of any stricture resulting, or of any large ulcerating surfaces following.

My method of operating is as follows:

Given a case of combined internal and external hæmorrhoids encircling the entire circumference of the anus, such a case as is considered a typical one for Whitehead's operation, I proceed first to remove each internal hæmorrhoid by the method heretofore described in the February number of the *Virginia Medical Monthly*, page 1,160, which, in brief, consists in catching each at its apex with a pair of catch forceps, raising it up, then grasping its base with clamp forceps, cutting off the hæmor-

*Read by invitation before the Twenty-eighth Annual Session of the Medical Society of Virginia, at Hot Springs, Va., September 2nd, 1897.

rhoid even with the upper surface of the forceps, and then running a continuous suture beneath and above the forceps the entire length of the cut surface; now slip out the forceps, and draw the continuous suture tight. When all of the internal hæmorrhoids are so treated, we then treat those that are external. The usual condition in these cases is not one of distinct hæmorrhoidal tumors, but a general varicose condition of a large number of vessels surrounding the anus, which is manifested by tumefaction and a nodular appearance of the vessels directly beneath the skin and in the subjacent tissue. I now make an incision with the scissors from behind forwards—first on one side and then on the other of the anus—letting it run directly over the apex of the tumefaction, but do not extend it beyond the anterior commissure of the anus on either side. I now dissect the skin back on each side of the tumefaction, from the mass of varicose vessels below, then with the curved scissors I cut out the mass of varicose vessels, with its attending adipose tissue, taking care to get it all out. I now let the cut skin surface fall together, when one can readily see how much skin can be spared from each side, which is then cut off, and the wound is closed by a continuous catgut suture.

I prefer the straight incision over the tumefaction to the practice of taking out an ellipitical piece, because one can better judge of the quantity to be removed after the varicose vessels have been taken out and the skin allowed to take its place. I would advise that care be taken in closing up the wound; that at least several of the stitches on each side should include the tissues at the bottom of the sulcus, in order to compress all oozing vessels, and thus avoid any extravasation of blood and dead spaces.

After each side of the anus has been thus treated, I apply a compress made wet with a solution of No. 1 Calvert's carbolic acid, 1 to 30 or 40 of water. I prefer this to iodoform, aristol, or any of the dry antiseptic powders, because I find it much more efficient to prevent suppuration, if any germs should get in, nor do I find it irritating, if Calvert's acid is used. I have now treated, I think, between thirty or forty cases by this method, without a single unfavorable result; and it is the rule with few, if any exceptions, that all cases thus treated are out, and leave the hospital or their homes by the ninth day. I strongly recommend this method.

I would like to add a few words with regard to the necessity of removing thoroughly and completely all existing hæmorrhoids and varicose vessels. I cannot agree with Dr. Edmund Andrews, of Chicago, in the article heretofore alluded to in this paper, where he says on page 311, "It is of the utmost importance to know that if you destroy by ligature, or cautery about one-half the height of the main pile tumors, or one third the area of any broad, flat varicose tracts, the remainder of the tumors, or other varicoses, always atrophy and disappear." I have also heard similar views expressed by other good surgeons, but such has not been my experience. Formerly when I used the clamp and cautery constantly, and since then, when using other methods, I have neglected to remove small piles or varicoses, and, as a result I have been frequently annoyed by recurrences in the course of a year or eighteen months. Such is not the case when the proper care is taken, as recommended above, to remove all pile tumors, or external varicoses; hence the necessity for some such method that will accomplish the end obtained in Whitehead's operation, without its attending or resulting evils, and such is what I claim for my substitute for Whitehead's operation. It leaves intact the band of tissue just at the base of the columns of Morgagni, where most of the papillæ are found, in which are located the endings of the tactile nerves.

Discussion.

Honorary Fellow, Dr. J. Wesley Bovee, Washington, D. C., had been much interested in the operation devised by Dr. Earle. He mentions the necessity for entire removal of the hæmorrhoidal masses and for asepsis.

To meet these requisites, Dr. Bovée has been doing the operation of Dr. Marcy, of Boston.

After well dilating the sphincter and washing out the lower part of the rectum, a pledget of antiseptic gauze, cotton or wool, around which is tied a string, is inserted in it above the hæmorrhoids. The bowel and surface surrounding the anus are now made antiseptic. An incision is made around the anus just at the junction of the skin and mucous membrane; the dissection is carried up all around just under the submucosa to above the hæmorrhoidal masses. There the arteries are felt and ligated with formalized fine catgut. Then all the hæmorrhoidal masses are removed, bleeding points properly treated, and the wound closed by continuous fine catgut or kangaroo tendon. When the operation is finished, no suture can be seen, as the last row has been buried and the cut edges at the junction of the skin and mucous membrane are accurately approximated. The field of operation is now carefully cleansed and an antiseptic

dressing applied. The pledget in the bowel is removed on second day by pulling gently on the string attached to it, and the bowels moved the second or third day.

By this method raw sutures are not left on the bowel surface to afford a lodgment and field for absorption of septic bacteria, and return of hæmorrhoids is well-nigh impossible.

The operation has proved to him very satisfactory indeed.

Honorary Fellow Dr. Wm. L. Robinson, Danville, Va., remarked that he was much impressed with the practical views expressed in the paper. Without knowing of the author's views, Dr. Robinson has been doing a like operation of catching up the pile tumor in the long axis of the bowel, drawing it up and then catching lower with pressure forceps or clamp and burning off with the thermo-cautery, then stitching with catgut armed with two needles below clamp. His results have been uniformly good.

TREATMENT OF PHLYCTENULAR KERATITIS.*

By J. HERBERT CLAIBORNE, Jr., M. D., New York, N. Y.

I feel some hesitancy in speaking of so simple a matter before so distinguished a body as the Medical Society of Virginia, but simple things and little things go to make up great things, and it is attention to little things which makes one successful in life. I hope, therefore, this brief apology will be a sufficient excuse for choosing this subject.

Amongst the lower classes of people—at least amongst those who live in a great city, phlyctenular keratitis is possibly the most common of all eye affections. The disease is restricted to the cornea and sclero-corneal margin; but, if you will not allow me a slight elasticity in my caption, I will state also that phlyctenulæ may likewise occur upon the bulbar conjunctiva. As the treatment of all these conditions is practically the same, I shall simply speak by the text of phlyctenular keratitis.

As the name implies, phlyctenulæ are blisters. Roughly speaking, the pathological condition is an aggregation of white blood-cells and lymph in the corneal tissue—more properly speaking, in the superficial area of the corneal tissue proper, for you remember that the cornea consists, from without inward, (1) of three layers of epithelium; (2) a transparent, elastic membrane; (3) corneal tissue proper, wherein are found a number of lymph spaces with fixed corneal cells in them; (4) another elastic membrane; and, finally, the endothelium lining the anterior chamber. Phlyctenulæ, then, as described, occupy, as a rule, the three layers of epithelium and likewise the tissue of the cornea proper. Sometimes the contents of these phlyctenulæ degenerate into pus, and then the condition is known as *pustular keratitis.*

In the clinics of a great city, one finds these cases very frequently. The subjects of this disease are almost always children of tender years, who have more or less the same physical characteristics. They are apt to be pale, badly nourished, with flabby muscles and pot-bellied. I also generally observe that the teeth are bad. It is a common sight to see a mother come to the clinic with a child in her arms whose face is buried in her bosom, and I think it may be said to be a symptom of this disease for the child to have in its hands a banana, or a piece of cake or candy. I feel convinced, from the frequency with which this observation has been made, that there must be an inclination toward sweets in children afflicted with this disease. You will generally find particles of cake or banana smeared over the child's face, and frequently I have seen it in their eyes. Owing to the great pain and irritation of the eyes, the hands are apt to seek the affected part.

The *symptoms* which must be described as most characteristic of phlyctenular keratitis are pain and photophobia. In fact, photophobia may be denominated a sign, yet to me it is an inexplicable one. The seat of this disease is in the cornea and adjacent structures, which, as you know, are supplied by the fifth nerve. Now, photophobia means "a fear of light;" but why an irritation of the fifth nerve, which has nothing to do with the retina and the function of seeing, should be expressed in the form of fear of light is, I repeat, a curious anomaly to me. The fifth nerve, which supplies the cornea, ramifies and breaks up into numerous fine branches which work themselves through the corneal tissue proper in and between the three layers of epithelium covering the anterior elastic membrane. When these phlyctenulæ occur, there is naturally pressure and irritation of these nerve fibres; and particularly when the phlyctenulæ break down, as they often do, and ulceration is occasioned, they are subjected not only to the pressure of inflammatory products, but to irritation from the atmosphere and the foreign bodies which

*Read by title before the Twenty-eighth Annual Session of the Medical Society of Virginia, at Hot Springs, Va., August 31–September 2, 1897.

float in it. Pain, therefere, is a reasonable symptom.

Now, I desire to call attention to two points particularly in the *treatment* of phlyctenulæ, and I propose to make those points here. 1. I do not remember to have seen a case of phlyctenular keratitis in a very young child in whom the nose has not been involved to such an extent that it runs, and that the orifices of the nostrils, together with the upper lip, are more or less red and inflamed. There is almost always, likewise, a thin, sanious, aqueous discharge from the nose. 2. Moreover, if one gives attention to the external canthus of the eye, in a large majority of the cases it will be found that it is split, forming what is known as rhagades, which bleed slightly when the eye is pressed upon by the fingers.

The running and sore nose and the ulceration or splitting of the skin at the external canthus of the eye are two important signs in this affection.

While I believe that this condition of the nose is frequently associated with phlyctenular keratitis, and that it may be the source of direct infection of the cornea, I cannot agree with my colleague, Dr. Dunn, of Richmond, Va., who thinks that it is always the source of phlyctenulæ.

I wish also to call attention to the condition of the finger-nails. These children almost always have filthy hands and dirty nails. I have no doubt that many cases of phlyctenulæ are the result of slightly wounding the epithelium with the dirty and infected finger-nails of the child, for it is recognized and true that phlyctenular keratitis, however much it may be the concomitant of malnutrition, is the result of a local infection with the pus-forming staphylococcus.

I desire to dismiss the subject of *constitutional treatment* in a very few words. It is all very well to talk of sending patients of this description to the seaside or to the country, of improving their food, or of giving them this or that, for, as I have already said, these cases occur chiefly among the lowest classes, and it is not possible for them to secure the benefits of good country air or good food. You may, perhaps, prevail upon the parents not to give the little patient such indigestible food as ham and cabbage, and you may order the syrup of iodide of iron or cod-liver oil or calomel $\frac{1}{8}$ gr. ter in die; but the chances are that if you do prescribe tonics they will not be continued for any length of time. They will be given only so long as the eyes are inflamed, for with the subsidence of the uncomfortable symptoms the parents relax into their accustomed carelessness, and in a few weeks the case will come back to you possibly as bad as ever. It is a very common suggestion to tell the parent to bathe the child with cold water with salt in it, and to rub the child with a rough towel. This will also be desisted from in a little while. Of late years, therefore, I have practically ceased to give this good advice to parents, with the exception of snatching the cake or banana from the child's hand and prescribing $\frac{1}{8}$ gr. of calomel ter in die, insisting that such food should not be given it. In fact, my treatment in the clinics of New York is simply local for the calomel, and I think my practice in this matter is the practice of that of the majority of men there.

Some years ago it was the classical thing to drop atropine solution into the eye, and thereafter to dust calomel between the lids with a camel's hair brush. I certainly consider that an excellent form of treatment now, but in the swaying of the pendulum back and forth, this treatment has fallen into desuetude, though it will probably appear at some future time.

The yellow oxide of mercury seems to be the most popular form of treatment at the present time. If you like, you may prescribe the official yellow oxide of mercury, but for my part I use a mixture which is weaker. I usually prescribe one grain of the yellow oxide to two drachms of white vaseline, for I find that the official strength is too disagreeable to the majority of people, and I secure quite as good results with the milder ointment. As a rule, I order the eyes to be bathed with hot water, in which a teaspoonful of borax to the pint has been dissolved, and this should be used two or three times a day. Twice a day at least, after bathing the eyes, a little bit of the salve, the size of a small pea, should be put between the lids, and the eye should be massaged slightly. In the majority of cases this treatment, together with ordinary cleanliness, will give good results, but I think no man can make an error who, at the same time, orders atropine to be instilled into the eye just before the yellow oxide salve is applied.

I think there can be no doubt that atropine is a mild anæsthetic, as well as a mydriatic, for it is doubtless, in the experience of many of you here, to observe a red eyeball become less red or an ordinary eyeball to become quite marble-like after the use of atropine. In fact, I hold that atropine and cocaine stand at the extreme ends of that group of drugs to which they properly belong—both are anæsthetic and both are mydriatic. Atropine has the highest mydriatic power and possibly the lowest anæs-

thetic effect, while cocaine has the highest anæsthetic and the lowest mydriatic. A single drop of atropine instilled into an eye suffering from photophobia will often produce a subsidence of the photophobia before the physiological effect of the drug is noticed in the pupil.

I sum up my local treatment of the eyeball itself, when I say that the use of atropine, hot water, in which borax has been dissolved, and yellow oxide of mercury, are the agents I employ. But let no man deceive himself into thinking that he is going to cure a case of phlyctenular keratitis which is associated with the running nose or split outer canthus by these remedies alone. The nose is to be treated and the ulceration at the corner of the eye has to be treated before the case will recover.

For the ulceration of the nose, nothing is so good as the solid stick of nitrate of silver. This is painful to the patient, and appears brutal in the eyes of the patient, but it is good treatment, as experience has proven to me. If the nose is covered with scabs, these must be torn off, the sore surface washed with the borax solution and the solid stick of nitrate of silver applied to the parts. I do this in the face of what the dermatologists tell us. If you wish to use a milder form of nitrate of silver, you may do so, but you will certainly prolong the recovery of the case.

As to the rhagades in the corner of the eye, I always use the solid stick of nitrate of silver and employ nothing else. Before applying it, I am accustomed to stretch the lids as wide open as possible in order to make the ulcer as deep as stretching will make it. The nitrate of silver is then applied to the bottom of the ulcer. I have seen cases of phlyctenular keratitis in which the nose and canthus symptoms dragged along for weeks until some one, who is called rough, but who in reality is only thorough, has applied the solid stick in the manner I have indicated. Two days after the application of this treatment, the patients invariably present themselves with their eyes in a much better condition, and they soon go on to complete recovery.

I have said that I always use hot water for these cases, but this is not strictly true. There are many cases in which I use cold water, and I am free to say that I am not able to tell you clearly when I should use the one or the other. I may fairly say, however, that if the phlyctenula is very large, and the photophobia not very great, I am accustomed to use hot water; but when the photophobia is excessive and the blister small, I am apt to use cold water.

I des're to give you a very simple suggestion which, although it appears brutal to the parent of the child, is excellent for relieving the pain of photophobia. When I was commencing the study of ophthalmology, I once saw a woman enter the clinic of Dr. Knapp with a child in her arms, whose head was buried in her bosom. The child was screaming at the top of its lungs, and the whole clinic was becoming demoralized. Dr. Knapp took the child from its mother, and, holding its arms and hands firmly, ducked its head in a basin of cold water and held it there some time. When he took it from the water, the eyes were open and the screaming ceased. I have frequently employed this method myself, have taught it, and have never failed to see good results follow its use. You may suggest this to the mother if you choose, but the probability is that if she has only one or two children, she will not employ it; if she has more than two, she will be more likely to try it.

Ice-cold water may also be dropped on the cornea with a pipette, but I think that bathing the eye in a quantity of cold water is preferable.

Dr. Wm. B. Davis, of the United States Army, showed me a very simple method of temporarily relieving photophobia some years ago. This method came to his notice on the plains of this country where, during the winter, our soldiers suffer from snow blindness, which, as you know, is attended by severe photophobia. The method consists of pouring into the hollow of your hand a little ether and holding it under the affected eye. The evaporation of the ether produces a sense of coolness which will relieve the photophobia very readily, but, unfortunately, only for a short while. The smell of ether is disagreeable, and sometimes I have seen it get into the eyes in children who struggle against it; so I hardly think that, as a remedy, it has much importance.

There is one thing about the photophobia of phlyctenula which I cannot explain to my own satisfaction, and that is that sometimes a large phlyctenula will produce very little, if any, photophobia, and in other patients a small phlyctenula will produce a very great deal. I have also observed that the nearer to the centre of the cornea the phlyctenula is, the greater is the photophobia, and it is a fact that marginal phlyctenulæ produce practically no photophobia at all.

Although it is distinctly a disease of children, I can recall several cases of phlyctenular keratitis in grown-up people. They are usually individuals of lymphatic temperament, and photophobia, as a rule, is present. I have never observed it above the age of 45. The treatment is the same as in children.

I have not endeavored to give a detailed

account of the treatment employed by others, or that which is suggested in the text-books. I have simply given what I believe is the ordinary treatment in the city of New York, which it is my custom to employ.

To sum up my views on this subject in the following brief way: Phlyctenular keratitis, as a rule, is a disease of childhood; it is usually associated with mal-nutrition, and is more frequently found in the lower classes. The treatment is constitutional and local; the former consists in improving the general health, if possible, by the administration of the iodide of iron, cod liver oil, calomel, and other tonics; personal cleanliness of the individual should be enforced, and especial attention given to the finger-nails; the prescribing of good, solid food should not be forgotten; the local treatment consists in hot or cold applications, the exhibition of atropine—one grain to two drachms of water—the use of yellow oxide of mercury ointment, the thorough cleansing of the nose, and the application of the solid stick of nitrate of silver to the orifice of the nose and to the rhagades of the outer canthus of the eyes.

39 *West Thirty-Sixth Street.*

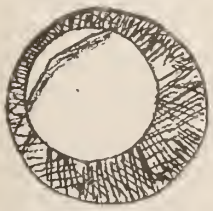
TWO ADDITIONAL CASES OF COLOBOMA OF THE LENS.

By JOHN DUNN, M. A., M. D., Richmond, Va.,

Professor of Diseases of the Ear, Throat and Nose, and Associate Professor of Diseases of the Eye, University College of Medicine, Richmond, Va.

Case I.—Mr. B , aged 24, shows in his right eye, whose vision, he says, has never been as good as that of his left eye, the following abnormalities. With the pupil undilated, marked corectopia exists, the pupil being situated upwards and outwards from its normal position. With the pupil dilated by atropia, the lens in the temporal part of its periphery proves to be deficient.

Case I.



O. D.—Pupil Dilated.

Case I.

O. S.—Pupil Undilated.

Under a strong plus lens, it can be seen that the boundary lines marking the deficiency come together at an angle, so that the lens tissue forms at the centre of the coloboma an imperfect cone. *Extending from the edge of the lens, and passing beneath the iris across the coloboma, can be seen numerous very distinct, fine, zonular fibres.* The lens substance is nowhere clouded, nor do there exist other ocular abnormalities than this imperfect development of the lens—V—$\frac{16}{50}$. The iris is not tremulous.

O. S. shows also corectopia, the pupil being displaced upward and outwards. In this eye there is, however, no deficiency of the lens substance.

Case II.—John H., aged 26, shows O. S., a coloboma of the iris, situated inferiorly. The deficiency of the iris is not complete, as a nar-

O. S.—Case II.

row band of iridic tissue extends in the ciliary region from edge to edge of the coloboma. Under the ophthalmoscope, *the inferior boundary of the crystalline lens is seen, for the space of the coloboma, as a straight line, from which zonular fibres pass to the ciliary region.* In other respects the eye is normal. O. D. shows no abnormalities.

In the *Archives d'Ophthalmologie*, May, 1896, Rogman reports two cases of coloboma of the lens. He was able at that time to collect reports of twenty seven other cases. Christen has reported three cases (*Archives of Oph.*, Vol. XXV, No. 1, p. 30; and I have reported one, *Archives of Oph.*, Vol. XXV, No. 3, p. 297), making in all only thirty-three cases, which shows that congenital deficiencies of the lens are among the rarer anomalies which present themselves for the oculist's consideration.

Rogman in his article brings together the results of the reports given by others. From this report, we learn that coloboma of the lens may be either monolateral, or bilateral; and that where it is monolateral the other eye may either be normal or the seat of other congenital anomalies than coloboma. In my three cases, it was monolateral, the other eye being normal in my first case, showing, in the second, corectopia; in the third, coloboma of theiris.

The volume of the eyeball affected with the coloboma may be either normal or reduced in size. In one of my cases it was reduced; in the others, normal.

The coloboma may exist as the only anomaly, or it may be associated with anomalies of other parts of the eye. In one of my cases the iris was abnormal; in the second, the iris showed, as mentioned above, a displacement of the pupil, the line of displacement corresponding to the direction of the coloboma; in the third, the iris was in part wanting.

The shape of the coloboma varies considerably; in one of my cases, the lower portion of the lens, that showing the coloboma, resembled the base of a heart, with its reentrant angle downwards; in the other, the coloboma was imperfectly cone shaped; while, for the third, the boundary line for the coloboma was almost straight.

The situation of the anomaly varies. Most frequently it is situated downwards. Knapp has seen a case where it was upwards; it has also been seen above and outwards; below and outwards; and directly inwards. In my first and third cases, it was downwards; in my second, it was without and upwards.

In some cases the affected lens has been transparent; in others, it has shown more or less opacities. In my first case, it was partially cataractous; in the second and third, entirely transparent.

The visnal acuity was good in some cases; bad in others. It was very bad in my first case; poor in the second, and good in the third.

In the majority of the cases the zonular fibres were for the space of the coloboma absent. In all three of my cases they were present, and so distinct as to add much to the interest of the picture presented to a strong plus lens in the ophthalmoscope. The presence of these zonular fibres, where they exist, is conclusive evidence, it would seem, of the congenital nature of the anomaly. And I am inclined to think, that had they been sought for, they would have been found in many of the cases where no mention is made of them in the given reports.

In some of the cases, the iris was tremulous; in others, not. In one of my cases it was; in the others, not.

In my first case, pupillary membranes existed; in the second and third, they were absent.

Rogman next considers the two explanations which have been offered of the manner of production of coloboma lentis. One attributes this partial deficiency of lens substance solely to imperfect development of the suspensory ligament; the other imputes the deformity to trophic disturbances occurring within the lens substance. Becker and Dor claim that the coloboma is the result, pure and simple, of the absence of the contractile force of the zonula over the colobomatous area. Rogman asks pertinently whether this explanation will suffice in those cases where the zonular fibres can be proven to still exist for this region? The dystrophic hypothesis, advocated by Heyl, Schiess, Gemuseus, and Cissel, explains this fault of development by saying that, for that portion of the lens which subsequently shows the colobomatous deficiency, the vessels, which for a certain period of fœtal life surround the lens, continue pervious beyond the time when they showed atrophy, and that their continued existence prevents the further proper development of that portion of the lens. Those cases where there have persisted remains of the canal of Cloquet, and where at the same time there has been no development of the lens substance, are offered in support of this hypothesis.

Rogman concludes by saying that no hypothesis, as yet advanced, is applicable to all cases; none of them, he continues, explain why the coloboma and the direction of the fœtal ocular cleft so often coincide. This last statement, read between the lines, would lead us to infer that Rogman is willing to find a connection between these colobomata and a faulty closure of the ocular cleft. How, then, would he explain the lenticular deficiencies in those cases where the direction of the coloboma and of the ocular cleft are not the same? Posey, (Archiv. of Ophth., Vol. XXVI, No. 3,) in an interesting article on "Congenital Defects of the Iris," offers an explanation, apparently very simple, of these defects—viz.; Irregularity in (including absence of) development of one or more of the twigs from the major circle of the iris. "Suppose," says he, "some slight irregularity in the proper distribution of one of the twigs, and corectopia would result; suppose that one of these twigs is absent, and coloboma is explained; suppose the anterior or long ciliary artery were absent, one or both, and we should have a coloboma of the iris which would involve its root, the ciliary body, and perhaps the choroid as well." Pursue this supposition of Posey's still further, and it leads to the suggestion that possibly coloboma of the lens may be due to irregularity in the proper vascular distribution to the lens itself. In the fœtal eye, "the blood from the vitreous vessels circulates in the lens sheath and is carried out of the eye by vessels of the iris, which anastomose with the vessels of the anterior portion of the lens sheath."—(Holden.) It is certainly more rational to suppose that failure on the part of one or more vascular twigs to the lens would result in failure of a corresponding part

of the lens to develop, than that a failure of these vessels, when once developed, to disappear at the proper time would result in absorption of the already formed lens substance. Furthermore, the agreement in direction of the lenticular and the iridic colobomata seen in Case II, and of the lenticular coloboma and the corectopia seen in Case I, suggests that a proper development of the major circle of the iris may be of more importance in the development of the lens than is now recognized.

EPILEPSY.*

By ALEX. L. HODGDON, M. D., Baltimore, Md.,

Dispensary Physician to the Department of Nervous Diseases, College of Physicians and Surgeons; Visiting Physician to the Home of the Aged.

How fraught with significance is the word epilepsy, and how many have suffered from this terrible affliction, the cry preceding which has been described by a talented writer as one terrible alike to man and beast. It invades not only the cabin of the humble, but spares not, in many instances, those reclining on downy divans. It has been termed Morbus Herculeus, from the supposition that Hercules suffered from the disease, and now we come to the long array of epileptics, who were not only prominent in their day and generation, but were very conspicuous characters in history, such as Cæsar, Petrarch, Wellington, Napoleon Bonaparte, and Peter the Great. These are all said to have been epileptics. The general characteristics of the convulsion are known even to the laity—the fearful scream, the succeeding quiet, only broken mayhap by the gnashing of teeth or the shuffling of feet on the floor during the clonic stage of the convulsion; then all becomes quiet, the discharge of neural energy has ceased, the muscular system becomes relaxed, reaction has taken place, sedation has followed with lightning-like rapidity on the heels of excessive stimulation; the patient sleeps, and quiet reigns supreme were it not for the stertorous breathing, which alone breaks the stillness of the air. What is now taking place? A conservation of energy is now springing into existence, the neural forces are revitalizing their constituents, so that when the time may again come for the irritant, whatever it may be, to discharge its forces into direct continuity with this delicate nervous tract, the neural current may reflexly discharge itself through the terminal fibres to the various muscles of the body, and another convulsion ensues.

The multiform subjective sensations occurring in many epileptics immediately before the advent of the paroxysm is a matter of considerable interest. Out of eighteen cases of epilepsy, selected at random from cases treated by me at the College of Physicians and Surgeons dispensary, there existed auræ, more or less distinctly defined, in eleven of the patients. The character of the auræ was very variable. The first has a feeling as though he had been struck on the frontal portion of the head, the attack immediately supervening. The second case complains of feeling nervous just before the paroxysm. Case third has an ill-defined aura, sufficient to enable him to find a place of safety during the attack. In the fourth case, an aura arises from the stomach, but it is not always present. Case fifth experiences a sensation as though a wheel were going around in his head a few minutes before the convulsions occur. In the sixth case, the aura takes the form of a feeling as though blood were boiling in his head about five minutes before the fit. Case seventh states that the aura starts from around the navel, and feels like colic in the locality of the navel, but when it reaches the head he feels drunk. In case eighth, the aura precedes the attack sometimes by five minutes. Case ninth, immediately before the fit occurs, feels a beating sensation under the sternum, which passes up to the brain, and, when it reaches the brain, the convulsion occurs. Case tenth feels a burning sensation in the stomach, which gradually reaches the head before the epileptic convulsion comes on. Case eleventh, thirty years of age, has had epileptic convulsions ever since he was eighteen years of age, and has had no aura until lately, when he noticed within the last three weeks a sensation running at his side from the lower right rib (where a cart shaft struck him some time ago), which, when it reaches his brain, would terminate in unconsciousness. This latter is a good example of associated aura artificially produced.

Some interesting points, in reference to these cases, are to be found. The following statistics are, I think, very nearly correct, in regard to age at which the first convulsion occurred, heredity, drunkenness as a possible factor in the production of epilepsy, initial cry, diurnal, or nocturnal epilepsy. The ages at which the first convulsion occurred were one in infancy, and another at six years of age, but had spasms

*Read before the Twenty-eighth Annual Session of the Medical Society of Virginia at Hot Springs, Va., September 2, 1897.

when a baby. One at twelve years. One at thirteen years. Two at fifteen years. Two at seventeen years. One at eighteen years. Two at twenty years. Two at twenty-two years. Two at twenty three years, and one at forty-two years. I could only trace a possibility to heredity *in four cases.* In three of the cases the convulsions were diurnal, and in nine of the patients, they were nocturnal, and diurnal, while in one case of paroxysmal substitution, (the case of V. G.) they were nocturnal, although she used to have them during the day, but the first convulsion she ever had, occurred at night. Two of the cases had the initial cry, and two were, or had been, drunkards. Laceration of the tongue was not necessarily an accompaniment. One was born in South America, and his mother used to suffer from intense headache, on account of the heat. In the case of K. D. White, aged sixteen years, who has had epilepsy for about three years, the reflex seemed to be largely due to an excessive determination of blood to the brain, as he has had bleeding from the nose lately, and has found great relief from the epistaxis. One case, who developed convulsions at about fifteen years of age, and who is now eighteen, says that just before the convulsions commenced, a dog bit him on the hand. Sometimes he has as high as three or four convulsions a week, and the fits are both diurnal and nocturnal.

In the case of V. G., the epilepsy primarily began, when she was carrying her first child, and she has been having them for twenty-two years. After the first convulsion, she did not have her menses for a number of years. She only has the fits at the time of her monthly sickness, and when that does not occur, she has them anyhow. Her epileptic attacks are nocturnal, hers being a case of paroxysmal substitution, as they first commenced on her at night, while carrying her first child, then she had them in the daytime, after which they again became nocturnal.

In the case of J. K., quite a remarkable series of symptoms takes place. She has both nocturnal and diurnal convulsions, but the fits occurring at night are more severe than those which take place during the day. She bursts out laughing when attacks come on, and she bites her tongue during the paroxysm. What can we adduce as the cause of these varied phenomena? Is it not reflex cause? Are there any true cases of idiopathic epilepsy? I doubt if they exist. I believe there must be an irritant somewhere, and I consider it appropriate right here to embody in this paper my article on Preputial Reflex Epileptiform Convulsions, which was published in the April (1897) number of the *Alienist and Neurologist:*

*"Phimosis, of course, is only one of the many sources of reflex epileptiform convulsions. A tooth forcing its way through the gums, causing pressure on the sensitive nerve filaments; a splinter imbedded in the finger exerting deleterious nerve irritation, or an unaccommodated eye with its resultant irritant action might all produce these reflex, epileptiform convulsions, or shall I not say the beginning of true epilepsy? And it seems doubtful if all epilepsies are not in a way reflex, from the irritable gastric nerves, constituting gastric epilepsy, to the tumor, causing irritation by pressure on some one or several of the functioning centres of the brain, and by the resulting symptoms indicating their locality. Gray very aptly, and I believe truly, says that epilepsy is only a symptom.

"Our conception of epilepsy will be altered, if at the outset we recognize the indubitable fact that epilepsy is but a symptom, just as is a cough or a fever, so that epilepsies may be divided into those that are due to recognizable organic disease, those that are reflex, and those that we may call idiopathic." If due to some iirrtant which may be removed, why not very carefully try to prevent further convulsions in the teething infant, and circumcise the epileptic infant with phimosis, for there must be a beginning to everything finite, and by removing sources of irritation you may prevent the formation of a permanent lesion, or intangible condition, such as habit epilepsy, both of which may in the end terminate the life of the epileptic, lapse into epileptic mania, and may finally follow the subject to his grave. We have somewhat of an illustration of this habit epilepsy in the rigor of malaria, those paroxysms which continue after the miasm has been removed from the system, which are dispelled, in some instances, by a mental impression, such as turning back the hands of the clock till after the usual time for the chill, only the malarial paroxysms do not seem to produce a permanent change in the function of the nerve tissue which may occur in epilepsy. May we not possibly by administering proper doses of bromide of soda to the teething infant, and by circumcising the child with phimosis, prevent a lifetime of misery? These matters should be attended to, and it would be well if all male infants were circumcised within the first month after birth, taking care to cut off all the skin

*See author's article on Preputial Reflex Epileptiform Convulsions, with Report of a Case, *Alienist and Neurologist*, April, 1897.

that covers the head of the penis, so as to leave it completely uncovered, and so that no part of the head can be made to remain covered. If this were done, it would prevent the occurrence of phimosis in the future, even if not present at that time. About the only objections that have been urged against cutting off the foreskin is that it leaves the sensitive head of the penis constantly exposed to friction against the clothing and other rough articles; and another objection made is that the exposure to friction decreases to a certain extent the sensibility of this very sensitive head. It does come in contact with the clothing, after circumcision has been performed, but after some time the mucous membrane of the glans penis becomes toughened and thicker, and so far as the decrease in sensibility is concerned, this is an advantage, as the act of coitus is prolonged, the glands of Tyson, situated near the corona, dry up, so that the glans penis of the circumcised individual remains dry and clean. I have performed the operation of circumcision many times, and have seen cases which have been operated upon by some inexperienced operators, which were about as badly off after the operation as before, on account of not having removed enough skin. One should not operate on persons afflicted with hæmophilia, unless the risk incurred from not operating were greater than that from an operation.

Kobelt has said that the glans penis is not exceeded in richness of nerves by any other part of the economy, not excepting the organs of sense; and if so, is it any wonder if reflex epileptic convulsions occur in the case of the infant or adult afflicted with phimosis, with a quantity of smegma imbedded under the foreskin, on the delicate surface of the glans, which cannot be wiped off because the foreskin cannot be retracted, and is it not a wonder that trouble does not ensue in more cases? The case which I will report is that of "W. T., aged near four months, who had suffered since one month of age from epilepsy, having had a convulsion nearly every day, and has also exhibited a great deal of irritability, which he manifested by frequent attacks of crying. Upon inquiry, I found that his urine had always passed away in drops, and dribbled away very slowly; also that he was passing considerable mucus by the anus. When I examined him, I found a very small preputial orifice, and was led to conclude that the convulsions from which he had suffered were probably reflex. As he had suffered from about three or four convulsions on the day when I first saw him, I resolved not to delay operating till the following day, but circumcised him that night. Since the operation of circumcision was performed, he has passed his water without difficulty, and his feces appeared more natural. I circumcised him Saturday night, and he had no convulsions on Sunday, but Monday afternoon he had three or four convulsions and a temperature of about $102\frac{1}{2}°$ F. I gave a little bromide of soda and acetanilide, also small doses of quinine sulphate. On Tuesday the temperature was about 101°, and on Wednesday his temperature was normal. He has not had a convulsion since Monday, and seems to be very quiet and good natured. It has been a long time since he was operated upon, and I have not heard of his having a convulsion since two days after he was circumcised."

We know that certain brain areas have certain functions intimately associated with cerebration, and that irritation of these centres cause certain definite symptoms, and this has shed new light upon the etiology of some cases of epilepsy.

How shall we treat epilepsy? As I said before, in my article on "Preputial Epilepsy," there is apt to be an irritant. Then what is the rational procedure? Is it not to try to find the irritant? If it be phimosis, perform circumcision; if it be a teething infant, administer suitable doses of bromide of soda, for it may be that a lifetime of misery is produced by neglected convulsions in infancy. If there be irritable gastric nerves (which we have every reason to believe produces many cases of epilepsy), then give subnitrate of bismuth or Fowler's solution in proper doses; or if nothing else will relieve, and with the full consent of the patient (for it may produce staining), administer therapeutical doses of argenti nitratis. Probably the most generally useful drug in the treatment of epilepsy is bromide of potash, which I have administered in doses of half a drachm three times a day, and have also given nitroglycerin gr. $\frac{1}{100}$ three times a day. In cases of nocturnal epilepsy, I consider it good practice to give chloral hydrat in proper doses at bedtime. There are many other drugs which have been used, such as cannabis indic. and opium, but I believe the bromides and chloral are the sheet-anchor in this very troublesome affection. Nitrite of amyl should be prescribed more generally in cases having a distinct aura; it should be used by inhalation, the little glass pearls constituting a convenient method for its administration. Of course, the diet of the epileptic should be regulated, particularly in cases of gastric epilepsy.

Discussion.

Dr. J. Allison Hodges, Richmond, Va.,

said he had listened with pleasure to the paper which has just been read; but from his experience he is not so sanguine of curing epilepsy as the author. He has pursued the plan suggested in many cases, but has met with no such successful results as the paper details. It is true that there may be a small per cent. of cases of this disease, due to irritative causes, such as phimosis, dental caries, digestive deficiencies, etc., that may disappear by removal of the prime cause, but they are extremely rare. Dr. Hodges would suggest to the writer that at the age he mentions it is often difficult to differentiate true epileptic seizures from some others of a similar character, and he would remind the author that it is probable that some of his cases may have been simply infantile convulsions which were purely reflex in character. In the speaker's opinion, the age at which the operation for phimosis is performed for the cure of this disease is immaterial. In fact, the operation *per se* is in no wise curative, acting merely as an irritant (a scald or burn on any part of the body producing the same result), and is but temporary in its ability to cut short or ameliorate the attacks.

Personally, Dr. Hodges' trials of many drugs and surgical procedures have weakened his faith in aborting or curing this disease, except when evidently due to traumatism, and it is now a serious question with him even whether the bromides are not ultimately more harmful in their results than the natural tendencies of the disease. He believes, in short, that it is the duty of every physician now to aid the commission established by the last General Assembly of this State in inaugurating some scheme of colozination similar to the Craig Colony in New York for these poor unfortunates as the best method of dealing with them.

Proceedings of Societies, etc.

MEDICAL EXAMINING BOARD OF VIRGINIA.

Hot Springs, Va., Aug. 30, 31, *Sept.* 1 *and* 2, 1897.

The Fall meeting of the Virginia Board of Medical Examiners was held at Hot Springs, Bath county, Va., August 30th, 31st, September 1st and 2nd.

Present—Drs. Nash, Rodgers, Brady, Budd, and R. S. Martin.

In the absence of the President, Vice-President Dr. Herbert M. Nash called the Board to order.

Dr. R. S. Martin, Secretary, recorded.

The minutes of the last meeting were read.

Questions on Hygiene and Medical Jurisprudence, Chemistry, Anatomy, Physiology, Practice and Surgery were read and adopted.

Drs. Rodgers and Budd were appointed a committee to audit the Treasurer's accounts.

The Board then adjourned.

The Board met at 10 A. M., September 1st.

Present—Drs. H. M. Nash, presiding; Rodgers, Brady, Foster, Magruder, Warriner, and R. S. Martin.

Questions on Histology, Pathology and Bacteriology, Materia Medica and Therapeutics, Obstetrics, and Gynæcology were read and adopted.

The Board then adjourned.

According to the adjournment, the Board met at 6 P. M., September 1st.

Present—Drs. H. M. Nash, presiding; Budd, Warriner, Brady, Magruder, and R. S. Martin.

Committee to audit accounts of the Treasurer reported as follows:

We, the committee appointed to audit the accounts of the Treasurer, beg leave to submit the following report: We find the Treasurer's account correct, there being a balance of $168.43 to the credit of the Board.

C. W. Rodgers,
S. W. Budd,
Committee.

Dr. Noah Jackson, Homeopath of Fentress, Va., was present in the examination hall during the examinations on Practice and Surgery.

Dr. R. S. Martin offered the following resolution, which was adopted:

Resolved, That each examiner must have the questions on his section printed, and that he must mail the Secretary a copy with synopsis of answers, ten days before the meeting of the Board.

The funds collected at this meeting were equally divided among the members in attendance.

There being no further business, the Board adjourned.

H. M. Nash, *Vice-President.*

R. S. Martin, *Secretary.*

The following are the *Questions* adopted for the *Examination* of three hours each in the nine Sections, beginning Tuesday, August 31, 1897.

I. Section on (I) Hygiene, and (II) Medical Jurisprudence.

(Tuesday, 9 A. M. to 12 M.)

Dr. E. M. Magruder, Charlottesville, Chairman.

(I) Hygiene.

Ques. 1. *Air*:—Name (*a*) The effects, on the human system, of very low atmospheric pressure, as in the ascent of high mountains. State the cause of these effects?

(*b*) The effects of increased atmospheric pressure, as in caissons, tunnels, mines, etc.

Ques. 2. *Water*—State (*a*) The different methods of purifying water.

(*b*) The impurities that occur in water.

Ques. 3. *Food*—Mention (*a*) The physiological effects of alcohol on the system.

(*b*) The pathological effects of the same.

Ques. 4. *Soil*—Mention (*a*) The principal difference between "atmospheric air" and "ground air."

(*b*) Describe the relation of "ground air" to disease.

Ques. 5. *Bathing*—Give briefly general rules for bathing, with reference to meals, fatigue, menstruation, pregnancy, heart disease, warmth and coolness of the body, length of time in the water.

Any four of the above blocks of questions may be selected, and each one so selected must be answered in full.

(II) Medical Jurisprudence.

Ques. 1. Give the definition of criminal abortion and the signs of recent delivery in the living.

Ques. 2. What is meant by the phrase "tenancy by courtesy?"

Ques. 3. What is infanticide, and how is the crime punished by law?

Ques. 4. Define adipocere and colostrum, and state under what circumstances they are found.

Ques. 5. Give the naked eye appearances of recent blood stains.

II. Section on Chemistry.

(Tuesday, 12 M. to 3. P. M.)

Dr. A. S. Priddy, Keysville, Va., Chairman.

The applicants will select any six of the following questions:

Ques. 1. (*a*) Explain the construction of a Fahrenheit thermometer.

(*b*) How many degrees Fahrenheit are equal to 50 degrees C.?

(*c*) Explain the expressions, free, latent and specific heats.

Ques. 2. (*a*) Define a radical; give an example.

(*b*) Define a neutral salt, acid salt, and a double salt.

(*c*) Explain the atomic theory of Dalton.

Ques. 3. (*a*) What is ammonium, and why classed with alkali metals?

(*b*) What is the source of all ammonium compounds?

(*c*) What is aqua ammoniæ, and how prepared?

Ques. 4. (*a*) What is the difference between putrefaction and fermentation?

(*b*) What are the conditions essential to fermentation?

(*c*) What is a fatty acid? Name a monobasic fatty acid, with formula.

Ques. 5. (*a*) How does an aromatic organic compound differ from a fatty organic compound?

(*b*) What are carbohydrates, and how are they grouped or classified?

(*c*) Name one of each class with its formula.

Ques. 6. (*a*) Describe a test by which you could distinguish a mercurous from a mercuric compound?

(*b*) How are the red and green iodides of mercury made?

(*c*) What would be the difference in effect on the human system between an overdose of a mercurous and a mercuric compound?

Ques. 7. (*a*) Give the average composition of normal urine.

(*b*) Describe the murexid test for uric acid.

(*c*) How may the earthy phosphates in urine be approximately determined?

Ques. 8. (*a*) What is an alkaloid?

(*b*) Give some of the characteristic properties of alkaloids.

(*c*) How should cases of poisoning by alkaloids generally be treated?

III. Section on Anatomy.

(Tuesday, 4 P. M. to 7 P. M.)

Dr. E. T. Brady, Chatham Hill, Va., Chairman.

Ques. 1. (*a*) What are the coats of the eye, and their characteristics (structural)?

(*b*) Name the humors of the eye, state where found, and the proportionate quantity of each.

Ques. 2. Describe the mammary glands, (structure, vessels, nerves, course of lymphatics, location and function).

Ques. 3. Describe the male urethra.

Ques. 4. Describe the chief veins of the lower extremity.

Ques. 5. Give form and boundaries of thorax, and name its important contents?

Ques. 6. What is the skin? Give a full description.

Ques. 7. What parts are divided, and what should be avoided in a lateral lithotomy?

Answer any six, and only six, of the above questions.

IV. Section on Physiology.

(Wednesday, 9 A. M. to 12 M.)

Dr. R. S. Martin, Stuart, Va., Chairman.

Ques. 1. (*a*) State the functions of the gray and white matter of the spinal cord, the course of the sensory and motor impressions, and name the centres in the spinal cord.

(*b*) What is the function of the red and white blood corpuscles—where made and where destroyed—state length of time required for the blood to make the entire circuit of the system?

Ques. 2. (*a*) State the changes which occur in the blood and air, respectively, as a result of respiration.

(*b*) State the origin, function and distribution of the fifth pair of cranial nerves.

Ques. 3. (*a*) Name the secretions with the organs engaged in their elaboration, and (*b*) the excretions with the organs by which they are eliminated.

(*c*) Describe the varieties of epithelium, their function and the situation of each variety in the mucous tract.

Ques. 4. (*a*) Name the varieties of muscular tissue—their distribution, and effect of muscular exercise on the lungs, circulation, skin, digestion and temperature.

(*b*) Describe the fœtal circulation.

Ques. 5. (*a*) Name the great division of the nervous system, with the chief characteristics and functions of each system.

(*b*) State the various sources of animal heat, how regulated, and how eliminated from the human system.

Ques. 6. (*a*) In what does the blood of the portal vein differ from that of other veins?

(*b*) Give physiological explanation of blushing.

(*c*) Give functions of vaso-motor nerves and the situation of their centres.

Ques. 7. (*a*) State the effect of section of the vagi upon the heart, respiration and deglutition.

(*b*) Give the proportion of blood to the weight of the body.

Ques. 8. (*a*) Give phenomenon of asphyxia with the effects upon the nervous and circulatory systems, with the changes in the blood and causes of death.

(*b*) Give the physiology of respiration.

Answer any six, and only six, of the above questions.

V. Section on Histology, Pathology and Bacteriology.

(Wednesday, 12 M. to 3 P. M.)

Dr. R. M. Slaughter, Theological Seminary, Va., Chairman.

Applicants must answer questions 1 and 2. They may take their choice of four questions of the remaining six.

Ques. 1. (*a*) Describe ciliated epithelium, and state where in the human body this variety of epithelium is found.

(*b*) Describe the histological structure of the arterial walls.

(*c*) Of what kind of tissue are the glands of Peyer composed?

(*d*) Of what kind of tissue is the floor of the fourth ventricle composed?

Ques. 2. (*a*) What is the difference between saprophytic and parasitic bacteria?

(*b*) State the general influence of sunlight on bacteria.

(*c*) Name and describe the microbe causing gonorrhœa.

(*d*) Give the pathology of gonorrhœa.

Ques. 3. (*a*) Define the term "tubercular arthritis?"

(*b*) What is the nature (pathological) of hip-joint disease?

(*c*) Explain the influence of traumatism in the causation of this disease

(*d*) Explain the origin and nature of so-called cold abscess.

Ques. 4. (*a*) What is hæmorrhage? What are its (anatomical) varieties?

(*b*) What is hæmorrhage by diapedesis? and under what conditions does it most commonly occur?

(*c*) Define the terms "thrombosis and embolism."

Ques. 5 Describe the pathological anatomy of enteric fever—as regards the bowel lesions.

Ques. 6. Describe the macroscopical and microscopical changes in the liver in interstitial hepatitis (atrophic cirrhosis).

Ques. 7. (*a*) Name the three groups of tumors (according to anatomical classification), and give example of each group.

(*b*) Give the physiological prototype, nature (benign or malignant), and common age and seat of occurrences of the fol-

lowing tumors: Lipoma, neuroma and carcinoma.

Ques. 8. (*a*) Define the term "polyemia" and mention the disease in which this condition often occurs.

(*b*) What is the physical condition of the spleen and liver in leukæmia?

(*c*) What peculiar condition of many of the red-blood corpuscles is to be observed in this disease?

VI. Section on (I) Materia Medica, and (II) Therapeutics.

Dr. L. S. Foster, Mathews, Va., Chairman.
Dr. J. E. Warriner, Brook Hill, Va.

(Thursday, 9 A. M. to 12 M,)

(I) Materia Medica.

Dr. Foster, Examiner.

Ques. 1. (*a*) How is iodine obtained? (*b*) Name the preparations and doses of iodine and the iodides. (*c*) With what are these incompatible? (*d*) Give the official preparation and dose of gold.

Ques. 2. (*a*) What is nux vomica, and what active principle does it contain? (*b*) What are the official preparations and their doses? (*c*) Name the official vegetable acids. (*d*) What are oxytocics? (*e*) Name the medicines belonging to this order.

Ques. 3. (*a*) What are emmenagogues? (*b*) Name the stimulating emmenagogues. (*c*) Name the medicines employed as emetics, with dose of each. (*d*) What salts of sodium are used as cathartics? (*e*) What potassium salts are so used?

Ques. 4. (*a*) Give formula of pilula cathartic. compositæ. (*b*) How may diuretics be classified? (*c*) What is pilocarpus and its chief chemical constituents? (*d*) Name the official preparations and dose of each.

Ques. 5. (*a*) Give preparations and doses of arsenic. (*b*) What medicinal substances are incompatible with them? (*c*) Give the preparations of the mineral acids and dose of each. (*d*) What medicines are incompatible with them? (*e*) Give preparations and dose of each.

Applicants will select only four blocks.

(II) Therapeutics.

Dr. Warriner, Examiner.

Ques. 1. (*a*) Give modes of introducing medicine into the system.

(*b*) Describe briefly the two processes of transfusion.

(*c*) In what conditions is "blood-letting" especially valuable.

(*d*) What is a proper diet in typhoid fever?

Ques. 2. (*a*) What conditions render anæsthetics dangerous?

(*b*) Give means of resuscitation if dangerous symptoms arise.

(*c*) What evil results are probable from anæsthesia during labor?

(*d*) Give reasons for choice of chloroform or ether.

Ques. 3. (*a*) Name most useful anthelmintics.

(*b*) Give uses of turpentine as a remedial agent.

(*c*) Write four prescriptions for controlling nausea.

(*d*) Give briefly indications for use of a blister.

Ques. 4. (*a*) What are the chief uses of iron in medicine?

(*b*) What is the danger from large doses of salol?

(*c*) In case of poisoning by it, name antidote?

(*d*) Why should comp. syr. squills be given with care?

Ques. 5. (*a*) Give therapeutic indications for pilocarpine.

(*b*) When is pilocarpine contra-indicated?

(*c*) What are most important uses of quassia?

(*d*) State if quassia is compatible with salts of iron, and why?

Answer four, and only four of the above blocks.

VII. Section on (I) Obstetrics and (II) Gynecology.

(Wednesday, 4 P. M. to 7 P. M.)

Dr. H. M. Nash, Norfolk, Va., Chairman.
Dr. Chas. W. Rodgers, Fishersville, Examiner.

(I) Obstetrics.

Ques. 1. Most approved methods of treatment of the asphyxia of the new born.

Ques. 2. Symptoms, prognosis, and the treatment of concealed accidental hæmorrhage.

Ques. 3. Causes of post-partum hæmorrhage, and the modes of stopping bleeding after labor.

Ques. 4. State briefly the mode of preparing and injecting a saline solution in collapse from hæmorrhage.

Ques. 5. Prognosis in breech cases for the mother and child, and the treatment of the after-coming head.

(II) Gynecology.

Ques. 1. Causes (*a*) which predispose women to uterine disease.
(*b*) of menorrhagia and metrorrhagia.
(*c*) of sterility.

Ques. 2. Symptoms (*a*) of cancer of the cervix.
(*b*) of ectopic gestation.

Ques. 3. Pathology of pelvic inflammation, septic or specific.

Ques. 4. Diagnosis (*a*) of prolapse of the ovary.
(*b*) differential, between pregnancy and other forms of abdominal enlargements.

Ques. 5. Treatment (*a*) of subinvolution of the uterus.
(*b*) of post-operative complications of laparotomy.

VIII. Section on Practice of Medicine.

(Thursday, 12 M. to 3 P. M.)

Dr. R. W. Martin, Lynchburg, Va., Chairman.

Ques. 1. Define uræmia—explain the pathology of uræmic poisoning when due to (*a*) insufficient secretion, (*b*) imperfect excretion.

Ques. 2. Describe the state of the affected lung in pneumonia in the stage of (*a*) engorgement, (*b*) red hepatization, (*c*) grey hepatization.

Ques. 3. Describe the course, duration and termination of scarlatina.

Ques. 4. Give the symptoms and termination of rickets.

Ques. 5. Define acute rheumatism and give the causes.

Ques. 6. Give the diagnosis between hystero-epilepsy and epilepsy.

Ques. 7. Describe a case of acne rosacea.

Ques. 8. Give the etiology of simple atrophy of infancy.

Answer six, and only six.

IX. Section on Surgery.

(Thursday, 4 P. M. to 7 P. M.)

Dr. S. W. Budd, Petersburg Va., Chairman.

Anæsthesia. Describe fully

Ques. 1. (*a*) The precautionary measures to be taken before giving an anesthetic.
(*b*) The conditions determining the choice of an anesthetic;
(*c*) Dangers;
(*d*) Method of administering { (1) chloroform; (2) ether;
(*e*) Important symptoms to be noted;
(*f*) Treatment of dangerous symptoms.

Ques. 2. Give the indications for intestinal anastomosis. Describe any two of the following methods: Abbé suture, Murphy button or the Maunsell operation.

Ques. 3. Differential diagnosis of inguinal hernia from hydrocele, from hydrocele of the cord, and from varicole. Describe the Bassini operation.

Ques. 4. Describe in detail two operative methods of treating internal piles, the preparation of the patient and the after-treatment.

Ques. 5. Give causes, varieties and treatment of acute otitis media.

Ques 6. Give a method of locating on the skull. (*a*) The fissure of Rolando. (*b*) Fissure of Sylvius.

Ques. 7. Give the causes, symptoms and treatment of cystitis.

Select any three from the last four questions.

Alphabetically Arranged List of Applicants for License to Practice Medicine, Surgery, etc., who Passed Satisfactory Examinations Before the Medical Examining Board of Virginia, August 31–September 2, 1897, at Hot Springs, Va

Baum, J. C., Land of Promise, Va., Phy. and Sur., Balt., '94.
Barham, C. R., Branchville, Va., University of Va., 1890.
Beydler, B. H., Maurertown, Va., Univ. of Balto., 1897.
Fuller, W. T., Winston, N. C., Leonard Med. Col., 1895.
Frazier, H. B., Pocahontas, Va., Phys. and Surg., Bal., '97.
Fahrney, W. E., Timberville, Va., Univ of Maryland, 1897.
Ford, W. C. Keezleton, Va., Phys. and Surg., Balto., 1896.
Graham, J. W., Bellfast Mills, Va., Tenn. Med. Col., 1897.
Gray, A. L., Palmyra, Va., University of Virginia, 1897.
Hopkins, J. M., Alexandria, Va, Howard Univ., 1894.
Hazen, Chas. M., Bon-Air, Va., Med. Col. of Va., 1897.
Hall, W. C., Kelly, Va., University of Virginia, 1897.
Laird, J. H., Mt. Carbon, West Va., Univ. of Va., 1896.
Laurens, John Cook, Ashland, Va., Louisville Medical College, 1896.
McGuire, Hunter H., Jr., Winchester, Va., Univ. Col. of Medicine, 1897.
Merchant, W. F., Dumfries, Va., Univ. Col. Medicine, 1897.
Moore, S. B., Garfield, Va., Georgetown Univ., 1897.
Pole, E. A., Hot Springs, Va., Baltimore Med. Col., 1897.
Porter, H. W., Louisa, Va., University of Virginia, 1896.
Rucker, S. L., Scruggs, Va, Univ. Col. of Medicine, 1897.
Skinner, C. L., Rockingham, Va., Univ. of Va., 1897.
Tinsley, E. O., Dillon's Mill, Va., Phys. and Surg., Balto., 1897.
Woodward, E. L., Richmond, Va., Univ. of Va., 1897.
Winfield, J. B., M. A., Richmond, Va., Univ. Col. of Medicine, 1897.
Welland, H., Middlebrook, Va., Non-Graduate.

INSTITUTIONS REPRESENTED BY THE APPLICANTS BEFORE THE MEDICAL EXAMINING BOARD OF VIRGINIA, FROM THE ORGANIZATION OF THE BOARD, JANUARY 1, 1885, TO SEPTEMBER 2, 1897.	Total Number from each Institution.	Total Number Licensed First Examination.	Total Number Rejected First Examination.	Licensed on Second Examination.	Rejected Second Examination.	Licensed Third Examination.	Rejected Third Examination.	Incomplete or Withdrew.
Medical College of Virginia	194	159	29	9	6	3		6
University of Virginia—Medical Department	161	159	2	1				
University College of Medicine, Richmond	61	53	7	4	1	1		
Baltimore Medical College and University Col. of Medicine, Richmond	2	2						
College of Physicians and Surgeons, Baltimore	128	92	29	4	1	2		4
University of Maryland	143	108	32	2	3	2		2
Baltimore Medical College	35	14	19	1	7	3	1	2
Baltimore University	11		9	2				
Washington University, Baltimore (Extinct)	1		1					1
National Medical College, Washington, D. C.	1		1					1
University of Georgetown, D. C., Medical Department	2	1	1					
Howard University, Medical Department, Washington, D. C.	25	5	17		1	2	1	
University of Maryland and Baltimore Medical College	1		1					
Georgetown College, Washington, D. C.	1		1					
Jefferson Medical College	39	26	11	2	1			1
Jefferson Medical College and University of Virginia	1	1						
University of Pennsylvania	18	15	3	1				
Medico-Chirurgical College of Philadelphia	2		2		1		1	
Medical College of Philadelphia	1		1					
Woman's Medical College of Pennsylvania	2		1					1
Hahnemann Medical College and Hospital (Homœop.), Philadelphia	6	4	2					
University of the City of New York, Medical Department	28	17	10		1			
University of New York	1		1					
University of Virginia and New York	1	1						
Bellevue Hospital Medical College, New York	18	17	1	1				
University of Virginia and Bellevue Hospital Medical College	1	1						
College of Physicians and Surgeons, New York	10	9	1	1				
Geneva Medical College, New York (Extinct)	1	1						
College Physicians and Surgeons, New York, and University of Va	1	1						
Long Island College Hospital, Brooklyn	4	2	2					
Yale Medical School, New Haven	1	1						
University of Vermont, Burlington	4	2	2	1				
Miami Medical College, Cincinnati	2	2						
Columbus Medical College	3	2	1					
Homœopathic Hospital College, Cleveland	2	2						
Pulte Medical College, Cincinnati (Homœopathic)	1	1						
Louisville Medical College	19	8	9	2	1		2	
University of Louisville, Medical Department	16	11	5					
Kentucky School of Medicine, Louisville	8	7	1					
Hospital Medical College, Louisville	8	5	3	1				
Vanderbilt University, Nashville	6	5	1					
University of Tennessee, Nashville	2	2						
University of the South, Sewanee, Tenn.	1		1					
Leonard Medical College, Raleigh (Colored)	24	15	7	3	2			
Medical College of State of South Carolina, Charleston	3	2	1	1				
Southern Medical College, Atlanta	4	2	2					
Atlanta Medical College	2		2					
Tulane University, Medical Department, New Orleans	3	3						
University of Louisiana (probably Tulane University)	1	1						
Medical College of St. Louis (Extinct)	1	1						
St. Louis Medical College, Missouri	1	1						
Detroit Medical College, Michigan	3	2	1	1				
University of Michigan, Medical Department, Ann Arbor	5	5						
Michigan College of Medicine and Surgery, Detroit	3	2	1					
Chicago Homœopathic Medical College	3	2	1					
Hahnemann Medical College and Hospital, Chicago	1	1						
University of Heidelburg, Germany	1	1						
St. George's Hospital, London	2	1	1					
Georgetown University	1	1						
King College, London	1		1					
Tennessee Medical College, Knoxville	4	1	2	1		2	1	
Chattanooga Medical College	1		1		1		1	
Western Reserve Medical College, Cleveland	1	1						
Rush Medical College, Chicago	2	2						
National University of Ohio	1	1						
Eclectic School, Cincinnati	2		2					
Cincinnati Medical College	2	1	1					
Southern Homœopathic Medical College, Baltimore	6	4	2	1				
Woman's Medical College, Chicago	1	1						
Columbian College	6	4	2	1	1			
Jefferson Medical College, Phila., and Baltimore Medical College	1		1					
Harvard Medical College	1		1					
Central Tennessee College	1		1					
Woman's Medical College, Cincinnati	1	1						
Northwest University, Chicago	1	1						
College of Surgeons, London	1		1					
Colleges unknown	7	4	2					1
University of Vermont and Leonard Medical College	2		1		1			
Columbian Unviversity, D. C.	1	1						
Non-Graduates	159	49	94	4	7		1	8
Totals	1,233	845	336	44	35	15	8	27

Nos. of examination papers.	List of Institutions Whose Graduates were Rejected by the Medical Examining Board of Va., at its Regular Fall Meeting, Aug. 31, Sept. 2, 1897. With Percentage Marks received in each Section. College of Graduation.	Hygiene and Med. Jurisprudence.	Chemistry.	Anatomy.	Physiology.	Histology, Pathology, Bacteriology.	Obstetrics and Gynecology.	Materia Medica and Therapeutics.	Practice.	Surgery.	Total.	Average Percent'ge	Remarks.
2	Non-Graduate	83½	75	72 7/16	80	80	69	71	50	71	651 15/16	72 7/16	
8	Jefferson Medical College, Pennsylvania	86¼	50	68	79	65	75	63½	70	56	612+	68+	
15	Non-Graduate				45						45	45	
16	Louisville Medical College	83¾	45	64⅜	85	75	65	69½	50	45	582⅝	64+	
21	Non-Graduate	86	60	69 13/32	83	75	73	84¼	45	50	626 13/32	69	
22	Non-Graduate	81	70	68 1/11	80	75	77	64½		49	564	70+	
23	Leonard Medical College, N. C.			51 5/11		75		48⅝		30	204	51+	
29	Univ. of Vermont and Leonard Med. Col.			63⅝		60		60½	80	54	318⅛	63+	
31	Baltimore Medical College	82½	45	67 13/32	85	75	77	59	45	74	609+	67+	
32	Non-Graduate	84	47	70¼	75	75					351¼	70+	
34	Non-Graduate			67⅜		77		66½		60	271 13/32	67+	
37	Non-Graduate	80	70	73 21/32	82	75	77	75	78	52	662 29/32	73+	

Institutions Represented by Applicants who came before the Medical Examining Board of Virginia, Fall Session at Hot Springs, Va., August 31st to September 2, 1897.	Total Number of Applicants from each College.	Total Number of Applicants Licensed from each College.	Total Number of Applicants Rejected from each College.	Withdrawals.	Incomplete.
College of Physicians and Surgeons, Baltimore, Md.	4	4			
Tennessee Medical College, Knoxville	1	1			
University of Virginia, Charlottesville, Va.	7	7			
Baltimore Medical College, Baltimore, Md.	2	1	1		
University College of Medicine, Richmond, Va.	4	4			
Louisville Medical College, Louisville, Ky.	2	1	1		
Jefferson Medical College, Philadelphia	1		1		
University of Maryland, Baltimore, Md.	1	1			
Howard University, Washington, D. C.	1	1			
Leonard Medical College, N. C.	2	1	1		
University of Baltimore	1	1			
University of Vermont and Leonard Medical College	1		1		
Georgetown University	1	1			
Medical College of Virginia, Richmond, Va.	1	1			
Non-Graduates	8	1	7		
Total	37	25	12		

Book Notices.

Twentieth Century Practice An International Encyclopedia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M. D., New York City. *In Twenty Volumes. Volume XI. Diseases of Nervous System.* Large 8vo. Pp. 962. Cloth, $100 for the Twenty Volumes. New York: Wm. Wood & Co. 1897.

When examining such an *Encyclopedia* as this—each volume relating to different diseases and written by different authors—we have to regret that its price of $100 for the set of twenty volumes, places it out the reach of many practitioners. We wish the publishers could see their way to sell separate volumes, or sets of volumes that relate to the same class of subjects, without compelling the purchase of the entire *Encyclopedia.* Such an arrangement would be of mutual advantage to publisher and doctor. We have not in current American medical literature a work so complete and so desirable as is this *International Encyclopedia.* This is a day of fast developing specialism in practice; and there are many doctors compelled to economize who wish all the useful works they can get relating to a given class of diseases, who are not able or willing to buy a mass of literature which they may regard as irrelevant to their special limitation of practice.

Volume XI is one of the most valuable of the *Encyclopedia.* Dr. James Hendrie Lloyd, with his vast opportunities in connection with Philadelphia hospitals, contributes a section of 476 pages on "Diseases of the Cerebrospinal and Sympathetic Nerves." It is a masterpiece of thoroughness—illustrated by reproduction of photographs of many of the conditions which can be shown by drawings. Dr. Charles K. Mills and F. X. Dercum, of Philadelphia, contribute about 85 pages on the "*Trophoneuroses*"—including Scleroderma, Acromegaly and Adiposis Dolorosis. Drs. L. Bruns, of Hanover, and F. Windscheid, of Leipsic, in about 240 pages, describe with remarkable simplicity, the distinctive *Diseases of the Spinal Cord*—with an eye always to the diagnosis and suggestive therapeutics. Dr. Paul J. Möbins, of Leipsic, gives an excellent article of about 80 pages on

Tabes Dorsalis—discussing fully its etiology, symptomatology, course, diagnosis, prognosis and treatment. We had hoped that this chapter would have lifted us out of the skepticism into which our experience had brought us as to treatment; but we find that, though the relation of the disease to syphilis is well established, little encouragement as to permanent results comes from even prolonged antisyphilitic treatment. He calls the "organic extracts," such as "testicular juice," "sheep's brains," etc., "*the modern humbug.*"

Dr. Adolf Strümpell, of Erlangen, Batavia, writes a short chapter of about 20 pages on what he terms "the *Combined System-Diseases of the Spinal Cord*"—including as "endogenous combined system diseases": "1, Hereditary or familial ataxia, the so-called Friedreich's disease; 2, Hereditary or familial spastic spinal paralysis." As "exogenous combined system-diseases of the posterior and lateral columns of the spinal cord," he included the sequelæ of syphilis, toxic system-diseases, the effects of pernicious anæmia, etc. The concluding chapter on *Pain* is by Dr. Lightner Witmer, of Philadelphia. He considers pain "as a state of mind" which he studies from the psychical, the psycho-physical, and the psycho-physiological points of view.

Annual of the Universal Medical Sciences, and Analytical Index. [In Five large Octavo Volumes, About 660 pages each.] Edited by CHARLES E. SAJOUS, M. D., Paris, and SEVENTY ASSOCIATE EDITORS, Assisted by *Over Two Hundred Corresponding Editors, Collaborators and Correspondents.* Illustrated with Chromo-Lithographs, Engravings and Maps. 1896. The F. A. Davis Company, Publishers, Philadelphia, New York, Chicago.

It appears to us that the Publishers do injustice to their interests in giving to this Annual the year 1896 as the year of publication in their imprint. The volumes form "a yearly report of the progress of the general sanitary sciences throughout the world" as contributed to books and journals for 1896, and the publication must therefore be in 1897. The work is too valuable to every practitioner to let even so small a misrepresentation as this detract from its sale.

We note several improvements in the arrangement of volumes, as compared with former series. The aim of this *Annual* is "to afford greater aid to the general practitioner, and to enable investigators and authors to find in its pages, not only food for thought, but also a greater number of utilizable facts." The length of abstracts has been increased so as to more fully convey an author's meaning, and to afford the reader sufficient data to enable him to use that author's suggestions to the best advantage. Most of the associates have contributed valuable personal commentations, distinguished in the text by individual initials; commentations without initials were introduced by the editor. This increased length of abstracts, etc., has thus added over half a million words to this edition of the Annual.

The "Analytical Index and Cyclopædia of Treatment," presenting in a concise form the progressive features of practical value in pathology, diagnosis and treatment, and the editorial commentations contained in this issue of the *Annual*, form one of the most important improvements conceivable. Covering 327 pages, it makes in itself a book that is invaluable to the practitioner—stating in a nutshell the substance of all the important contributions to the five volumes. It is arranged alphabetically; but the more certainly to assure prompt reference, a good index is appended. Other items of improvement over former issues are:—Headings and side-headings in black type; Prescriptions are written out in full, instead of running them into the text; Therapeutic subjects are collected in Volume V, which also contains the Analytical Index, which the practitioner can the more conveniently keep upon his desk for ready reference; and there is a noticeable increase in number of colored plates of superior finish.

Principles of Medicine. By CHARLES S. MACK, M. D., One of the Professors of Materia Medica and Therapeutics, Hahnemann Medical College and Hospital, Chicago. Chicago: W. T. Keener Co. 1897. Cloth. 12mo. 133. $1 net.

Why this book should be "designed for use as a *text-book* in medical colleges," we do not know. In the preface, the object is stated to be "to show that cure cannot be intelligently attempted excepting under the guidance of *similia similibus curantur* as law;" and yet, in continuation of the same sentence, it goes on to say that "one may consistently accept homœopathy and at the same time accept *whatever else is good in medicine.*" What inconsistency! And yet designed as a text-book in medical colleges? The science of medicine is by no means perfected, but every day facts show that it needs larger walls than those of similia similibus to confine its development. It ought to be sufficient to refer to the inestimable value of *anti*-toxins as the very opposite of the dogma of homœopathy.

Johns-Hopkins' Hospital Reports Vol VI. Baltimore. Johns-Hopkins Press. 1897. Paper 4to. Pp. 409. *Illustrated by Cuts and Plates.*

These *Johns-Hopkins' Hospital Reports* are all valuable beyond ordinary publications, because each article has to stand the ordeal of close criticism before its acceptance for these reports. Besides its authoritative position, the articles are all on live subjects. Dr. Henry J. Berkeley makes the report in *Neurology*, limiting it to "Studies on the Lesion, produced by the action of certain poisons on the cortical nerve cell." Dr. Thomas Cullen reports a case of "fatal Puerperal Sepsis, due to introduction of elm tent (with illustrations); also a case of Adeno-Myoma Uteri Diffusum Benignum; also part of Article on "Pregnancy in a Rudimentary Uterine Horn—Rupture—Death"—Dr. G. L. Wilkins contributing the other part. Dr. Wm. D. Booker makes a most excellent "Bacteriological and Anatomical Study of the Summer Diarrhœas of Infants." Dr. Simon Flexner writes on the "Pathology of Toxalbumin Intoxication." Our want of space forbids synopsis of the book; but the Reports themselves are unusually well prepared.

Diseases of Women. By J. BLAND SUTTON, F. R. C. S., Eng., Surgeon to Chelsea Hospital for Women; and ARTHUR E. GILES, M. D., B. Sc. Lond., F. R. C. S., Edin., Assistant Surgeon to Chelsea Hospital for Women. *With 115 Illustrations.* Philadelphia: W. B. Saunders. 1897. Small 8vo. Pp. 436. Muslin, $2.50 net.

This "hand-book for students and practitionres" is an excellent one. The arrangement of text, the relation of facts and the description of methods are all presented in such a way as to be useful for students for examination purposes, and as a first-rate hand-book for practitioners. The drawings are distinct and well illustrate the points intended to be brought out conspicuously. It covers, as an epitome, the whole field of gynæcology—mentioning a number of facts here and there not related in the text-books.

Outlines of Histology. By M. D. HOGE, JR., M. D., Professor of Histology, Pathology and Urinology, University College of Medicine, Richmond, Va., etc. 1897. Cloth, small 8vo. Pp. 84. Interleaved Edition. Price, $1.50. (For sale by the *Author.*)

We are gratified to learn that this has proven a popular manual, and has already secured a ready sale.

New Instruments, etc.

Improved Hypodermic Syringe.

The accompanying illustration shows the newest improvements in hypodermic syringes. This instrument is unique, from the fact that it embodies all the best features in both syringe and case. It is the outcome of many years experience in this line of work. The case is made of aluminium, and is curved to fit the body when carried in the vest pocket. It permits of

sterilization by boiling. The piston packing and method of speedy adjustment are the same as employed in Mulford's Improved Antitoxin Syringe—namely, improved vulcanized rubber. This is so disposed that by simply turning the piston head to the right the packing is adjusted at any point in the barrel. No lubricant is needed, the fluid to be injected furnishing all that is necessary. This is found of immense advantage. The packing does not shred, as is the case with asbestos, nor become hard and unyielding as does leather. On the other hand, when it is found necessary to renew the packing, it is not necessary to send the syringe to the manufacturer, since the physician can insert a new washer by following the written directions.

The syringe was designed by H. K. Mulford Company. It is supplied with two extra reinforced needles and eight tubes of select hypodermic tablets.

Editorial.

Spring Session, 1898, of the Medical Examining Board of Virgtnia.

We are authorized by the secretary, Dr. R. S. Martin, Stuart, Va., to announce that the Medical Examining Board of Virginia will meet in the Hall of the House of Delegates for routine work, including revision of Questions to be used in examination, etc., at 8 P. M., Monday, May 9th, 1898; and that Examinations of Applicants for Permission to Secure License to Practice Medicine or Surgery in Virginia will begin punctually at 9 A. M., Tuesday, May 10th, 1898, in the same Hall.

Yellow Fever, 1898.

The lateness of the season when the first cases of yellow fever appeared this month last in Louisiana, the prompt measures adopted to limit the material spread of the disease, and the gradually increasing information on the part of the profession as to its nature render it improbable that anything like a widespread epidemic will occur in this country this year. The earlier cases this year bore so striking a resemblance to dengue, that, it appears from newspaper reports, they were mistaken for cases of the latter disease. Although cases have been reported as occurring along the Gulf coast of Texas, Louisiana, Mississippi, Alabama and Florida, we have not heard of cases at any of the Atlantic seaports.

Since those who are in position to know something of Dr. Giusseppe Sanarelli's researches and results, in Brazil, are unanimous in the conviction that the bacillus of yellow fever has been discovered, we are encouraged to look forward with confidence that the profession of our Southern States will avail themselves of the opportunity now presented to study, with the new light thrown on the subject, some of the obscure points in its etiology and treatment. Sanarelli has been occupying himself in the preparation of a protective or curative serum. His experiments have been very extensive—over 2,000 animals having been vaccinated with it. Dr. Paul Paquin, President of the St. Louis Board of Health, we understand, is investigating the subject in different localities where cases of the fever have been occurring. We shall await official reports with much interest.

American Academy of Railway Surgeons.

The Fourth Annual Meeting will be held in the Auditorium, in Chicago, Ill., on October 6, 7 and 8, 1897. An excellent programme is arranged. Dr. L. E. Lemon, Division Surgeon U. P. Railway, Denver, Colorado, is President; Dr. D. C. Bryant, Oculist U. P. Railway, Omaha, Neb., is Secretary.

Multilocular Ovarian Cysts in Negresses—Information Wanted.

Dr. I. S. Stone, 1449 Rhode Island Avenue, N. W., Washington, D. C., requests information in reference to multilocular ovarian cysts in negresses. In his experience they are very rare, while parovarian, papillomatous, dermoid, and broad ligament cysts are occasionally seen. Letters of inquiry have been addressed to nearly all the members of the Southern Surgical and Gynæcological Association, who should have, by far, the most experience in treating these cases. The answers received, for the most part, agree with the experience of Dr. Stone. It is earnestly requested, that surgeons generally will aid in collecting enough information to be of value, as there seems to be no authentic record of cases, nor even of an effort to investigate the subject. Gentlemen having operated for ovarian tumors occurring in negresses will please state the number of cases, age, size of tumor, and the color of the patient. [We trust our readers generally will make prompt response to this, and all such requests. When so able a gynæcologist as Dr. Stone undertakes an investigation like that above indicated, the profession may rely on it, that they will receive valuable returns for any help they may give in making a collective report.—Editor.]

The Tri-State Medical Society of Alabama, Georgia and Tennessee

Will hold its Ninth Annual Meeting in the Senate Chamber of the State Capitol, Nashville, Tenn., October 12, 13 and 14, 1897. The railroad rates are already reduced for visitors to the Tennessee Centennial. Dr. W. D. Haggard, Jr., Nashville, is chairman of the Committee of Arrangements; Dr. W. F. Westmoreland, Atlanta, is President of the Society; and Dr. Frank Trester Smith, Chattanooga, is Secretary. Whoever proposes to read a paper, report a case or exhibit a specimen should notify the secretary promptly.

The Alabama Medical and Surgical Age

Has removed its publication office from Anniston to 2107, Third Ave., Birmingham, Ala. This journal, under the able editorial management of Dr. J. C. LeGrand for the past nine years, will remain under his control. He some time ago moved to Birmingham. Never an issue of his ably conducted journal comes to hand that we do not feel a special interest in examining, and it is rare that we are not benefitted by reading its pages.

Serum-Therapy in Virginia—Informati.n Wanted.

At the regular February meeting of the Richmond Academy of Medicine, a committee of three, consisting of Drs. Arthur Jordan, Landon B. Edwards, and E. C. Levy, were appointed to make a report upon "The Progress of Serum-Therapy." The committee have, by careful and diligent research, obtained data from which they are able to make a report showing the progress which this interesting mode of therapeutics, introduced in the evening of the nineteenth century, has made in the medical profession, other than in Virginia. It is also the desire of the committee to show how far it has progressed among Virginia physicians. To further this end, we earnestly request that every physician who has employed serum therapy, or who feels an interest in the subject, to report to the committee his experience, *whether favorable or not*, or furnish them his views on the subject. Address all communications to any member of the committee, or to Dr. Arthur Jordan, Chairman.

Inquiry About Goat's Milk, Goat's Blood Serum in Wasting Diseases, Diphtheria, etc.

Dr. W. Thornton Parker, Groveland, Mass., would be greatly indebted to any of our readers who would write to him concerning any experience they may have had in the use of *goat's milk in the treatment of wasting diseases.* He would also be very glad to receive at the same time professional opinion concerning *goat blood serum*, as to its antitoxin effect in the treatment of tuberculosis, diphtheria, etc. In his opinion, goat blood serum will be found a valuable agent in serum-therapy.

Messrs. Bartlett, Garvens & Co., Richmond, Va.

Have moved their store to the corner of Ninth and Franklin streets, where they have far more commodious and better equipped quarters. So far as we are informed, this is the only reliable house in Virginia, West Virginia, or North Carolina that deals exclusively in surgical instruments and apparatus, medical appliances, obstetric instruments, etc Telegraphic orders from reliable parties are promptly attended to.

C. & O. Railroad Hospitals.

The Chesapeake and Ohio Company has recently announced its intention of establishing at convenient points along its road, a system of four hospitals, to be under the charge of the company's Chief Surgeon, Dr. C. W. P. Brock, of this city. Clifton Forge is the only place thus far positively selected for the location of one of these hospitals. At that point, it has been decided to remodel Glady's Inn, which was built and has heretofore been used as a hotel, and it will be equipped with only such apparatus and appliances as will be in keeping with the times. It is understood that this hospital will be ready during the early part of October for the reception of any of the sick or wounded employes. If we mistake not, this is the first move of its kind made by any company in Virginia, and without doubt, the C. & O. has taken a great stride forward. Under the guidance of such an able and energetic gentleman, as is the Chief Surgeon, we feel certain that great good will be done.

Obituary Record.

Dr. Girard Robinson Ricketts

Died at his home in Proctorville, Ohio, September 20, 1897. He was born in Front Royal, Va., February 14, 1828. Read medicine for three years with his cousin, Dr. G. C. Ricketts (deceased), of Guyandotte, W. Va., finishing his studies at the Western Reserve Medical College of Cleveland, Ohio, in 1855. He leaves a widow, one daughter, Mrs. C. D. Bush, and three sons, Drs. Edwin S., B. Merrill, and Joseph V., all practicing in Cincinnati.

Antikamnia for Pain and Pyrexia.

Medical Reprints, London, Eng., well states the value of antikamnia to consist in its rapid effect in alleviating the suffering of the patient while more radical treatment is working a cure. While endeavoring to rid our patient of his neuralgia, rheumatism, typhoid, intermittent or malarial fever, we secure him relief from pain and intermission of fever. We have, in short, in this drug, not a remedy for any disease, but a most useful antidote to the two great symptoms—pain and pyrexia.

Klondyke Diet.

Mary had a little dog,
But lost it, oh, the pity!
It fell into the mutton stew
'Way up in Dawson City.
—*Omaha World-Herald.*

His Last Words.

"What were Murphy's last words?"

"Faith, he didn't say any—he died too sudden."—*Harper's Weekly.*

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Original Communications.

Report of a (I) Case of Hypertrophic or Biliary Cirrhosis, with Comments on its Etiology; Also a (II) Case of Persistent Crepitant Rale.*

By JAMES TYSON, M. D., Philadelphia, Pa.

Professor of Clinical Medicine in University of Pennsylvania, and Physician to the Hospital of the University.

CASE I.—*Hypertrophic or Biliary Cirrhosis.*

The patient was a merchant, 55 years of age; he was first seen in consultation with Dr. George Wells, of Wayne, Penna., on January 7th, 1897. Later he was admitted to the Hospital of the University of Pennsylvania. He had been a merchant and manufacturer for thirty years. His family history has no bearing on his case. He had the ordinary diseases of childhood, and since that age was healthy until three years ago. About that time he received an overwhelming shock due to the sudden and unexpected death of his wife after confinement. Whether this event had or had not to do with his illness is not known, but soon after it he began to have attacks of pain in the epigastric and right hypochondriac regions, extending thence towards the back on both sides, but more on the right. These attacks were commonly associated with chills and fever, in which the temperature reached 103° F. and 104° F., followed by sweating. The paroxysms usually lasted about three hours, and occurred at intervals of about two weeks, sometimes only once a month, or even less often. After a trip to Atlantic City, for example, it did not recur for two months. He described the pain as dull and aching in character. The attacks were followed by jaundice, clay colored stools and very dark urine for some time afterward. He has lost forty-five pounds in the preceding three years, and feels excessively weak. Any indiscretion, he says, will bring on these attacks, such as over eating, over-work, etc. His appetite is variable, the bowels always constipated. At times he has copious flow of urine, rising at night four or five times, while his habit is to urinate two or three times during the night. He drinks large amounts of water during attacks, and a freer discharge of urine occurs. About a year ago, says Dr. Wells, under whose care he was for two years or more, the gall bladder could be easily felt distended with bile and gall-stones.

When he came under observation he weighed 125 pounds without clothing. He had weighed 165 to 170. The skin was slightly jaundiced over the face, and to a less extent over the entire body. The conjunctivæ were plainly icteroid. On the arms and legs were numerous dark-red spots of dried blood, produced by scratching the skin, to which he is impelled by the intense itching during and after attacks.

The urine contained a small amount of albumin with hyaline casts. Dr. Wells informed me that during the two years he was under his care there was at times also small albuminuria with hyaline casts.

Examination of thorax and abdomen.—Abdomen, natural symmetry fairly well preserved. There seems to be a little dilatation of stomach. There is no undue resistance in the hepatic region; the same region is comparatively without tenderness, though he said he could not have stood the manipulation if made directly after an attack. In the mammillary line, hepatic relative dullness begins at the fifth rib, absolute at the sixth, and extends to edge of thorax. During the attacks he says there is tenderness across the epigastrium, seemingly concentrated about the region of the gall bladder, though it is impossible to indicate the exact site.

Examination of the *heart* recognizes a soft, systolic murmur, increased in intensity to the phonendoscope. The *lungs* are normal.

Mr. R. had one attack while he was in the hospital. I was sent for at eight o'clock of a Sunday evening, because I particularly desired to be present if he had such an attack, but by the time I arrived the paroxysm

* Two cases presented to the Section on General Medicine of the College of Physicians of Philadelphia.

had passed away, and he was suffering very little. There was, however, some pain in the epigastrium and in the adjacent hypochondria of both sides. This attack succeeded a rather liberal dinner, followed by ice cream. The paroxysms increased in severity in the night after I left him, so that a hypodermic injection of morphine was required. The next day it was noted that he was more jaundiced, the urine having also become bilious. The attack was associated with fever and followed by sweating. This was said to be a fair sample of one of his usual attacks. Prof Ashhurst saw him in consultation, and an operation was not deemed advisable.

Soon after this, Mr. R. went to Thomasville, Georgia. While there he took cold. Suppression of urine and delirium supervened; he passed into a state of coma, and continued thus for thirty-six hours. He revived somewhat, and was brought to his home, near Philadelphia. On the 11th of April, 1897, he had a convulsion, and soon afterward died, though before his death the urine had increased to 48 and 50 ounces in the 24 hours.

Necropsy by Dr. Wells, April 12th: The *liver* was enlarged, firm and resisting, the surface hard, rough and granular. The edges of the organ were rounded and smooth; capsule thickened. The gall bladder was dilated; its walls thinned. It contained very little bile, and one facetted gall-stone one-half of an inch in diameter. It was softish, easily crushed. The wall of the common bile duct was thickened and its lumen narrowed. The *kidneys* were slightly undersized, very much congested; capsules slightly adherent; cortical area decreased.

The *spleen* was hard and large, three or four times the normal size. The *pancreas* was hard and adherent to adjacent organs; contained numerous cheesy and calcareous masses. There were no signs of appendicitis. No microscopic examination was made of any organs.

The case fulfills the conditions of so called *biliary* or *obstructing cirrhosis* The presence of a single facetted stone and the dilated gall-bladder, which was at one time during life so distended that it could be felt at the edge of the thorax, all point to original and continued obstruction to the biliary passages. Latterly it may have been a case of so called ball-valve obstruction by a single stone, but I think originally there were many stones which were from time to time passed.

The case forms a text for some remarks on the subject of *hypertrophic cirrhosis*. The distinctive clinical features of hypertrophic cirrhosis are jaundice, jaundiced urine, the absence of ascites, as contrasted with the opposite of these symptoms in atrophic cirrhosis. Commonly, too, the liver is enlarged. An essential condition of all these symptoms is obstruction to the onward movement of the bile, while the branches of the portal vein are free and unobstructed. Such obstruction may be within the biliary canaliculi, or due to pressure external to them. Internal pressure may be caused by a calculus or an outgrowth from the cells lining the canaliculi, such as the adenoma, or adeno-sarcoma studied by Kelsch and Keener, by Hanot and Gilbert, by Fenley and Adami, by M. Howard Fussell and others It does not follow that ascites may not also be produced by such a growth, because, with the attainment of sufficient size of a nodule, compression will also be exerted upon the portal radicals and ascites ensue, as in a case of Kelsch and Keener's, where the liver was filled with nodules of all dimensions, from that of a pin's head to an orange.

External pressure may be exerted by an overgrowth of interstitial tissue outside of the vessels—an overgrowth excited by the pressure of distended bile vessels. Such a case may have been the one reported this evening, because no morbid growth or other evidence of internal obstruction was found. To such a case, too, the term *biliary cirrhosis* may be correctly applied. The actual demonstration of the necessary histological conditions is, however, wanting, because no microscopic examination was made.

The occasional but rare instances in which atrophic cirrhosis is associated with jaundice may be cases in which the biliary tubules as well as the portal vessels are compressed.

The greatest difficulty in the way of explaining the symptoms and morbid anatomy of the two conditions is, after all, the etiological one. It is commonly conceded that excessive use of alcohol is a cause of both. Now, why it should, at one time, cause the atrophic, and at another the hypertrophic form of cirrhosis, with their widely different symptoms, is unknown. The difference in size of the organ is less difficult of explanation. The recognized fact that in hypertrophic cirrhosis there is more embryonal connective tissue, and in atrophic more fibrous, is sufficient explanation. They represent different stages in connective tissue formation. But why does this tissue now envelop the biliary tubules, and again the branchlets of the portal vein, producing, in the first instance, obstructive jaundice, and in the latter ascites? Can it be that hypertrophic cirrhosis always starts in an investment of the biliary passages, stimulated by the irritation of the distended bile vessels, and that atrophic cirrhosis starts in a

destruction of liver cells killed by the alcoholic poison, and is completed by the replacement of the latter by connective tissue? In such event, we would be compelled to remove alcohol from the causes of the hypertrophic form. On the other hand, a certain number of cases, including those due to intra-canalicular obstruction by gall-stones or morbid growths, such as adenoma or carcinoma with cirrhosis, are thus explained.

Final settlement of the question must depend on an examination of as many as possible of cases reported—cases of undoubted hypertrophic cirrhosis confirmed by autopsy—with a view to determining their cause. Such a study would well reward the student, and it is hoped that some one will be found who will have the patience to make it.

Case II.—*Case of Persistent Crepitant Râle.*

The patient exhibited is 43 years of age, and has been a laborer all his life; temperate in his habits. His father died of miner's consumption at 60; he has one brother living who has had severe cough for a long time. Otherwise, the family history is negative. The patient himself had the usual diseases of childhood, among which should be emphasized, as of possible importance, whooping-cough, of which he had a severe attack when he was eight years old.

For the last seven years he has been troubled with shortness of breath, often so severe that he cannot walk upstairs. He insists that he has absolutely no cough or expectoration, the most searching enquiry failing to get him to admit either. He has lost considerable strength, and during the last seven years, 29 pounds. He is unable to work at present on account of weakness and shortness of breath.

Physical Examination.—When stripped and lying on his back, his chest is seen to be very spare, almost emaciated, with a deep suprasternal notch, prominent sterno cleido mastoid muscles, and a distinct depression between the two heads of each. His breathing is distinctly abnormal, and the entire chest wall in front rises "as one piece" with each inspiratory act. The inferior edge of the thorax stands out prominently, and the lower inter costal spaces below the nipple are drawn in with each inspiratory act. His upper chest and neck have the appearance of one who is persistently struggling for his breath against rigid chest walls. It is, in fact, an asthmatic chest. The sides of the thorax are bounded by a straight line, and it cannot be said that he has a barrel-shaped chest, though the anterio-posterior diameter is rather disproportionately great as compared with the transverse. The left half of the thorax is plainly more prominent or bulging than the right. When he sits up also, there comes out more strongly the stoop and prominent back of the emphysematous chest. The breathing rate is evidently more frequent than it should be.

On palpation, vocal fremitus is felt everywhere, variously distinct, while the percussion note is hyper-resonant anteriorly and at the sides. *No distinct cardiac dullness is demonstrable by percussion.* To auscultation, a normal vesicular murmur is audible on the upper anterior thorax and as far down as a line drawn through both nipples. Below this, there is a *typical crepitant râle,* which extends on the right side to the upper border of liver dulness, and on the left side, downward and around into the infra-axillary region. *It is confined to inspiration.* It is also heard over the lower part of the thorax posteriorly, but less loudly and less continuously.

The heart sounds are rather feeble, but there are no murmurs, and, as already stated, there is no distinct cardiac dulness demonstrable by percussion.

The question I would like to have decided in discussion is, whether the sound heard is *pleural,* or whether it is an *intra*-pulmonary sound. I intend nothing etiological in the use of the word crepitant.

The conclusion to which I am forced with regard to the patient is, that he has emphysema of the lungs. This diagnosis is sustained by the physical signs, but not at all by the history, except as to whooping cough many years ago, when he was only seven years of age. He is now forty-three years old, has been ailing seven years of decided shortness of breath, leaving a period of twenty-nine years in which, according to his own account, he was free from acute illness. We must, however, allow for lapses of memory and defective observation characteristic of persons in his position of life. He has improved greatly, so far as dyspnœa is concerned, since he has been in the hospital, to which he was admitted the 8th of February. Still this crepitation which was heard at the first examination is heard still (June). It is probably not quite so constant in the back as it is in the front. It is rather less marked on the right side. He has never complained of pain in his side.

His blood examination showed 4,300,000 red discs; hæmoglobin, 75 per cent. The urine was frequently examined with negative results.

SOME REMARKS UPON SUMMER DIARRHŒA OF CHILDREN.*

By J. A. ANDERSON, M. D., Danville, Va.

The title of this paper would better convey its meaning had the term "Dyspeptic Diarrhœa" been used. This disease generally begins as a functional trouble, as a consequence of the ingestion of improper food or bad hygienic surroundings. In other words, an attack of indigestion has been brought about from some cause. The food, instead of being digested, remains in the stomach for a varying period, and gradually passes into the bowel still undigested. During the colder months of the year this may cause the child to have one or two actions showing signs of indigestion, without any evil consequences. During the hot months, especially June and July, the little sufferer may not fare so well. During the summer months, there is no dearth of frugal micro-organisms; they seize upon every opportunity to make their presence felt. The undigested contents of an infant's stomach and bowels are no exception. These micro organisms have entered with the food, and in the absence of the digestive fluids have set up a rapid decomposition, which soon causes more or less fever, with vomiting and diarrhœa. This is an irritative diarrhœa, caused by a putrefactive process, due to the presence of micro-organisms, and unless relieved promptly will sooner or later lead to inflammatory changes. In this case, as in the colder months, the trouble may pass away through the efforts of nature—vomiting and purging—but, as a rule, there remains an offensive diarrhœa, which goes on from day to day and from week to week, until finally the child has been reduced to "skin and bones," and the mother then sends for a physician and tells him that her child is "teething."

This brings me to the main purpose of my paper, which is: To bring to the attention of the medical profession the importance of enlightening the minds of the laity, and, I am sorry to say, the minds of some of our practicing physicians, that "summer diarrhœa" and "teething" are not synonymous terms. This idea has been an accepted fact among the laity from time immemorial, and I fully appreciate the difficulty of the task for the enlightened medical man to set them aright.

This accepted fact, by the laity, has caused more deaths, directly or indirectly, than any single disease of childhood. The neglect of medicinal treatment at the proper time often places the disease at a great disadvantage, if not beyond the reach of medical aid. The average parent seldom seeks medical advice until there has been great wasting of flesh or some complication has set in. They rest securely in the belief that the child is only "teething," and that this is a natnral process and ought not to be interfered with. This belief is entertained by most every woman who has borne children, and too often by the family physician.

There is no excuse for a physician to encourage such a belief; it borders on criminality. For the laity there are excuses. It is but an exemplification of human nature when an effect is present to search for a cause. They are cognizant of the immunity which a child under six months of age suffers more or less from this trouble. After this age dentition commences, and it is rarely ever the case that a child does not suffer at some time during this period from diarrhœa. This idea is so deeply rooted into their minds that they generally ask, when seeking medical advice, "What is good for a child when it is teething?" Every intelligent physician knows when that question is asked exactly what is meant, and should endeavor to impress upon the mother the true nature of the case, assuring her that it is not necessary for a child to have diarrhœa because it happens to be teething, but when they do have it at that time, it is but the more necessary to relieve it as soon as possible. The laity has never considered the fact that as many children erupt teeth during the winter months as during those of summer, and, if teething was the cause of diarrhœa, there would be as many cases of diarrhœa during the winter months as we see during the hot season. But this is not the case; we see but few cases—and very trivial ones at that—during the former period, but an abundance during the latter period. We look forward to cold weather as a time when our protracted cases will commence to improve, and are seldom disappointed. They do not appreciate the fact that the infant is comparatively free from attacks of diarrhœa so long as it is fed exclusively upon healthy mother's milk. But when the mother begins to supplement its food by feeding it upon cow's milk and little articles of food from the table, which is generally commenced a short while before or about the time for the beginning of dentition, then you may expect and do have, sooner or later, derangement of the stomach

*Read before the Twenty-eighth Annual Session of the Medical Society of Virginia, at Hot Springs, Va., September 2nd, 1897.

and bowels in the majority of cases. They do not appreciate the fact that the hot season is the season for diarrhœa among adults as well as among children, and that the same cause which produces it in the adult would be equally liable to produce it in the child. They know beyond the shadow of a doubt that teething does not cause diarrhœa among adults, while the absence of teeth might do so. These facts of themselves ought, when properly presented, to cause the intelligent layman to stop and think.

There is no difference between the condition caused by the putrefactive changes taking place in the undigested food in the stomach and bowels of the child and the direct feeding to the child of decomposed food, except that in the latter case the symptoms come on sooner. When you are called to see one of these little sufferers, the fact will be impressed upon you many times by the mother and others present that the child is "teething," but that it "teethed so hard" that they thought best to call in a doctor.

Many physicians recognize the true condition of the case, but, in order to avoid controversy and slurs against their intelligence, acquiesce in the diagnosis. Just let the doctor assert that the condition is not due to teething—he cuts quite a small figure in their estimation—"don't know anything about children." On the contrary, let him sit quietly, look dignified and wise, say nothing, with now and then a graveyard expression, and finally chime in: "The child is only teething." He has struck a harmonious chord, and hears many I-told you-sos, and proceeds at once to apply the sovereign remedy—the gum lancet. If the case is mild, he proceeds to split one gum; if moderately severe, he splits two; and if severe, he splits every gum in sight, and advises the administration of a dose of turpentine for fear there may be worms present also. A hum of approval greets his ears and causes every nerve in his body to thrill with rapture. He has exhausted the fountain of medical science, everything has been done that could be done, the family is satisfied, and, if the child dies, no one is the wiser.

This is not an overdrawn picture. Every physician who has practiced medicine ten years can testify to these facts, unless his experience is entirely different from mine, for I believe these turpentine and gum lancet doctors are pretty well scattered over this country.

That this impression has remained as long as it has upon the minds of the laity is due to the fact that the members of our profession have not attempted to correct it whenever an opportunity presented itself.

We have a State Board of Health; every city and town has a board of health. The end in view of these boards is to prevent disease, and thereby the destruction of human life. Here is an idea which is almost universal among the laity, and, I will venture to re-assert, causes as many deaths as any disease of childhood, and is, to a certain extent, a preventable cause, is a cause as potent in the destruction of human life as bad sanitation, and is a cause which can be corrected in a very few years if every practitioner of medicine could feel it his duty to combat it upon all occasions.

This trouble is very tractable when taken in time, before inflammatory changes have taken place, and very obstinate thereafter.

I would not have any to believe, from the assertions herein made, that the eruption of teeth cannot and never does cause diarrhœa. Such a statement would be wide of the truth. The intimate relations of the cerebro spinal and sympathetic systems of nerves are such that an irritation in one part of the human system may pervert the functions of an organ in a far distant part of the body, or even wreck the whole system. I can conceive how the difficult eruption of teeth may pervert the functions of the stomach and intestines, cause a dyspepsia, and thereby set up a dyspeptic diarrhœa, and may thus be an indirect cause.

The subjects most liable to be affected by this disease are bottle fed children; and a physician cannot be too precise in explaining to the mother the danger in the least degree of not carrying out to the letter the proper methods of preparing the milk, cleansing the nursing bottle and nipples, the proper intervals of feeding, and the quantity to be given at a time.

As this comes under the head of prophylaxis, I could not do better than quote from Keating's *Encyclopædia of the Diseases of Children* the following:

"Every gastro-intestinal derangement, no matter how slight, should receive prompt attention, with the idea that at any time severe or even dangerous symptoms may supervene."

"To summarize, prophylaxis demands—

1. "Getting as many infants out of the city in summer as possible.

2 "The education of the laity up to the importance of regularity in feeding, to the dangers of overfeeding, and as to what is the proper diet for infants just weaned.

3. "Proper legal restrictions regarding the transportation and sale of milk.

4. "The exclusion of germs, or their destruc-

tion in all foods given, but especially in milk, by carefully sterilizing milk and scrupulous cleanliness in bottles, nipples, etc.

5. "Prompt attention to all mild derangements, especially in summer, cutting down the amount of food and increasing the amount of water during the days of excessive summer heat."

I have but a few words to say as to the medicinal treatment. An accurate knowledge of the causes of this disease, and of the changes taking place in the gastro intestinal tract, are the all-important items as a basis of an intelligent treatment. One point must always be uppermost in the mind of the physician, and that is that the fermentation or decomposition must be stopped before the child's bowels can be safely checked, and to never attempt to check an offensive discharge by the use of strong astringents or opiates. The fetor of these discharges is familiar to us all, and no physician feels that the way is clear until he has vanquished it by evacuants, dietetics, antiseptics, or digestants.

I will not presume to suggest my favorites among these different classes Every physician has his hobbies and is "wedded to his idols," and has gained his information from the same source as myself—reading and experience. His success or failure in the treatment of these cases will convince him of any error, and make a stronger impression upon his mind than any words from myself.

CHOREA—ITS ETIOLOGY, PATHOLOGY, AND TREATMENT.*

By FRANCIS B. BISHOP, M. D., Washington, D. C.

President of the Medical and Surgical Society of the District of Columbia; Director of the Electro-Therapeutic Clinic, Eastern Dispensary, etc.

This subject, while very old and perhaps a little threadbare, is one that offers a wide field for speculation, and the object of placing it before this body is, that it may be thoroughly discussed, particularly as to its etiology, pathology and treatment. This paper is not intended to embrace cases of organic origin, but the great number of cases which in the present light of pathology are necessarily classified as functional, and at present must be treated as functional diseases.

It seems to be the opinion of the most advanced pathologists that this disease is the direct result of some infection; in other words, that it is a germ disease, while others hold that the rheumatic diathesis particularly predisposes to it. This may or may not be so, and the question of a positive etiology and pathology seems yet to be in doubt. It is reasonable to believe, however, that an unstable condition of the higher nerve centres predisposes to this condition, and that any poison affecting these centres may produce in one person epilepsy, in another a general neurasthenia, and in another chorea.

It is not an unreasonable hypothesis, in the light of personal experience, in my section of the country at least, that rheumatism plays very little if any greater rôle in the disturbance of these centres than does malaria, scarlet fever, measles, whooping cough, influenza, or any of the contagious or infectious diseases. Indeed, in some of the Southern and Middle States, the facts would seem to bear out the impression that malaria is largely responsible, not only for chorea, but also for the rheumatism that is often looked upon as the cause of the chorea which may accompany or follow the rheumatism or malaria.

Whether this hypothesis is correct or not, there is no doubt of the fact that there is an unstable condition of the nerve centres, and what concerns us as electro-therapeutists is, what rôle does electricity play in the cure of this malady, aided of course by such remedies as may appeal to our judgment as the proper thing to use in each particular case.

A severe nervous shock, such as fright or grief, is often all that is necessary to disturb the equilibrium of the nerve centres in these predisposed subjects. Anæmia is laid down as a predisposing cause of chorea, but my observation has led me to the conclusion that the anæmia is often the result of the chorea, or the direct result of the irritant acting upon the higher nerve centres. The chorea may precede or follow the anæmia, or they may appear simultaneously; and here it is interesting in this connection to note a few points on anæmia from Landois and Sterling's Physiology. They say that "In *acute fevers*, as the temperature increases, the number of *red* blood corpuscles *diminishes*, while the *white* corpuscles *increase* in number." Again, "By greatly cooling peripheral parts of the body, as by keeping the hands in iced water, in some individuals possessing red corpuscles of low resisting power, these corpuscles are dissolved, the blood plasma is reddened, even hemglobinuria may occur." And again, "Abnormal forms of the red corpuscles have been observed after severe burns;

* Read before the American Electro Therapeutic Association, September 21, 1897, at Harrisburg, Pa.

the corpuscles are much smaller, and, under the influence of the heat, particles seem to be detached from them. *Disintegration of the corpuscles* into fine droplets has been observed in various diseases, as in severe malarial fevers."

From this it appears that any severe shock to the nervous system, whether it be rheumatic fever, malarial fever, or any other acute fever, excessive cold to the periphery, or a severe burn, may have a deleterious effect upon the red corpuscles of low resisting power, thereby predisposing to anæmia. The same causes seem to operate upon the cortical motor centres of the brain, when in an unstable condition, predisposing to chorea, neurasthenia, epilepsy, or some other so called functional nervous disorder. Hence, in those cases we usually have anæmia accompanying, preceding or following nervous manifestations; therefore, even after the exciting causes have been removed, the anæmia, still existing, affords such poor nourishment to the disordered nerve centres that they are incapable of recuperation without assistance.

What concerns us as physicians is, How can we best render assistance to these poor unfortunate patients? for we well know that medicines often prove futile when depended upon entirely.

The menstrual period is a very trying time to the nervous girl; and when normally performed, lowers the number of red blood corpuscles, and very frequently, when obstructed or suspended for any length of time, may give expression to intense symptoms in the form of chorea, anæmia, or one or more of many functional nervous troubles.

That electricity plays a most important part in the treatment of the latter class of cases can, I think, be no longer a question of doubt. The following case is that of a young girl of sixteen, whom I have known from childhood and treated for various ills peculiar to our climate. She has passed through most of the diseases of children, including an attack of diphtheria. She has always been pampered and petted and allowed to have pretty much her own way, and tight lacing was early practiced. At the age of fifteen she was sent to a boarding school. At that time she was accustomed to plenty of outdoor exercise. This was exchanged for close rooms and long hours of mental labor. The menstrual functions were performed irregularly; nervous twitchings began, and became more and more prominent. She soon showed signs of mental deficiency; anæmia and chlorosis followed, and she was sent home a full and well developed case of chorea.

With the exception of measures to relieve constipation, this case was treated exclusively by electricity, rest, and nourishing food. The electrical treatment consisted of twenty minutes in the ozone cage every day, and in five or six weeks she was perfectly restored to health, her functions being performed normally, and all symptoms of chorea had disappeared. The mild galvanic current was passed through the head two or three times a week, in addition to the ozone treatment—the positive electrode over the motor area, first on one side and then the other, for one minute, the negative at the back of the neck. The current strength was not more than one or two milliamperes, and turned on very carefully, and always stopped as soon as patient could detect the taste of the current, no matter how little the impression upon the needle of the motor. The quieting effects of these treatments were often visible at once, and were frequently followed by refreshing sleep.

Another interesting case, in which the heavy static spark played an important part, was one in which the sensory as well as the motor nerves were involved, and the muscles of the lower extremities were so weakened as to cause the patient to walk with a reeling gait like one intoxicated. Indeed, she was once accosted by a fool of a policeman while on her way to my office. He claimed that he thought she was under the influence of liquor. She was at the time being assisted by her sister. I will give the history of the case in her own words, copied from a letter she wrote at my request:

"Having been very nervous from childhood, at the age of fifteen years, which was three years ago, I suffered a great shock, which preyed upon my mind so that it resulted into me being taken with severe pains in my limbs and arms, which were so painful that I could not bear a light cover to touch me, or any one to speak, while suffering these pains. About a year after, I began to stagger in my walk—my right foot would jerk away from me and bounce several times before touching the ground; while sitting, my foot would move off, and I had no control of it. I would reel from side to side, and could not stand or walk alone without leaning heavily on some one's arm. My feet felt at the bottom as if they were tied to a bag of mush; my limb was very heavy and would feel as if asleep, and I could not feel a pin in it. My heart would beat to suffocation at the least noise, and my head would shake also. Last winter, my right eye closed for over a month; then my left eye closed the same way.

"Since undergoing the electrical treatment,

I find that I am steadily improving. My limb don't walk away with me as it did, and I have relief from those pains, which were almost unbearable."

Her condition when I saw her, about a year ago, was practically as follows: A slender girl of medium height, with a fairly good color, but anæmic and somewhat emaciated; could not stand with feet close together, with eyes open or closed, could not walk without staggering, knee jerk absent in both limbs, no ankle clonus, pupil reflex, normal to light and accommodation, loss of sensation to pain in both lower extremities below knee. Could not feel a pin stuck well through the skin. Choreic movements well marked in right leg, head and hands. Complains of severe pains at night, with numbness all the time in limbs, and often pain around chest. This case had been treated with arsenic, potass. iodid., iron, quinine, and a number of other remedies, before coming for electrical treatment. In fact, the diagnosis had been made of posterior spinal sclerosis, a mistake very easily made in this case.

While this case is not yet well, and I am not prepared to say how soon, if ever, it will be, it certainly has steadily improved, and the young lady looks and acts as though she really intends to recover.

The treatment has been since under my care, quinine, from twelve to fifteen grains a day, administered for a week at a time, because she lived in a malarial neighborhood. At first it was necessary to administer opium at night for the relief of the pain. She has been treated electrically not more than twice weekly and very often not more than once a week, with galvanism to the head, the ozone bath, and the heavy static spark from a W. & B. six plate machine. The ptosis was treated with faradism to the superior levator muscle. Rest was enjoined, with plenty of nourishing food. The fright that she received from the policeman had a very bad effect, and for a while it seemed as though she would be as bad as ever; but she seems again to be steadily improving and apparently on the road to recovery.

My reason for treating these cases in the way indicated, is based upon the hypothesis of an unstable condition of the motor, sensory, and very often psychic centre of the cortex, and that the perfect harmonious and healthy action of these centres are distorted and incoordinate, in consequence of some severe shock or some poisons, and that they become so weakened thereby that they are often thoroughly incapable of themselves to throw off the spell that binds them; and that the gentle galvanic current passed through these centres stimulates them and aids them in their efforts to physiologic action. The static cage gently stimulates the periphery, and is very soothing to the general nervous system; while the inhalation of the ozone permeates every tissue, supplying oxygen to the impoverished blood corpuscles, thereby giving new life to all the tissues of the body, including the nerve centres themselves. The static spark, of course, is not used unless there is considerable loss of sensation; and in that case, there is nothing else that will restore it so quickly.

I hope, Mr. President, that this subject may be fully discussed, for I believe that in recognizing and successfully treating so-called functional diseases, lies our greatest field of usefulness.

1913 *I Street.*

CAUSES AND TREATMENT OF THE NAUSEA AND VOMITING OF PREGNANCY.*

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The nausea and vomiting of pregnancy, though often distressing and occasionally serious, is a form of suffering which can sometimes be cured and frequently mitigated, but which, in a large number of cases, is regarded as an inevitable and irremediable disorder. The physician, helpless in his ignorance, is apt to become indifferent, while the patient appeals in vain for a surcease of one of her earliest, severest, and longest sustained sorrows. Chloroform alleviates or annuls the pangs of labor; will it ever be possible to overcome the most trying accompaniment of pregnancy?

The object in this paper is not to claim a complete solution of the problem, but to awaken and stimulate thought, provoke discussion, and call attention to certain facts and deductions which may be worthy of consideration.

It will be conceded that a scientific application of remedies depends upon a correct etiology, which, in turn, depends upon a correct interpretation of general and local symptoms. The nausea of pregnancy is relieved, on the one hand, by drugs which possess different physiological actions, or by measures addressed to one of several different conditions; and, as

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practical therapeutists, we are fortunate in attaining even partial success in treatment. On the other hand, conclusions based upon the effect of one drug or one measure are not invariably trustworthy; for, under these circumstances, each observer would infer that the disease, or morbid condition, which he rectifies, is always owing to the specific cause which he has treated, and, as a consequence, he is tempted to herald the measure which he finds efficient as a cure for all cases. Another observer may use the same means and fail. One recommends stretching the cervix for nausea; another, lifting the uterus; another, a gastric sedative; and another, a nerve sedative or stimulant—the multiplicity of measures adopted with more or less succsss establishing the fact that the nausea has no common starting point, though it localize in the stomach, so to speak, or be of reflex origin.

Now, it cannot be denied that a displaced uterus, and irritated cervix, a congested kidney, or pressure upon any of the abdominal viscera, may be properly assigned as causes of reflex nausea during pregnancy, as well as in the unpregnant state. What explanation, however, is offered when none of these causes are present, and when the sickness occurs in the very beginning of pregnancy?

Although the structural and functional changes taking place in the uterine system are common to all cases of early pregnancy, nevertheless nausea is not an invariable result of the new order. Why are some women exempt? There must be something more than a manifestation of local disturbance The general condition of the patient must be interrogated.

Whether of reflex or central origin, the terms employed in its description and the significant characters of the symptom make it clear that nausea is not due to gastric disease. As we are all aware, the nervous system is involved; and, remembering that reflex causes can be often either eliminated or not proved, we are led to the belief that the central nervous system is in some way deranged. What, then, is the condition of the nervous system, and how is it produced?

The nausea of railway and ocean travel has been stated to be due in part to shock, caused by the swell of the ocean or the upward and downward motion of the cars, propagated through the spinal column to the brain. The relief obtained by recumbency of position does not necessarily prove the assertion, inasmuch as nausea in general, whatever be its source, is, as a rule, diminished or perhaps relieved, when the subject reclines. In my own opinion, the theory advanced is tenable in certain instances, especially in railway travel, while it may hold good on the ocean. Another reasonable theory is that the sickness is caused by the demands made upon the nervous system in the endeavor to adapt itself to a new environment and unusual conditions. This might be called a semi- or cerebral reflex, similar to the nausea caused by the effort of an individual to look through unsuitable glasses. The sickness caused by riding backwards in a vehicle, or by swinging, must be explained by the foregoing theories. To these forms of nausea that of pregnancy bears a certain resemblance, and may be partly accounted for in the same manner. The nervous system is suddenly called upon to assume new and increased functions. It may be said to be caught off its guard and overtaxed until habituation occurs.

But does this additional explanation of nausea answer our main question? Why are not the demands made upon the nervous system by other and more exacting functional changes upon the brain and cord attended more frequently with nausea? Why should not normal menstruation, with its varied local disturbances and nervous complexities, be usually attended with nausea? Early pregnancy is, functionally, no more complex and equally as normal. The abrupt cessation of menstruation does not remove the difficulty, for, under other circumstances, it does not give rise to nausea as often as pregnancy. In early pregnancy, the mere tax upon the centres, in regulating the growth of the uterus and the increased blood supply, can hardly afford a solution; for the local conditions, viewed from a purely anatomical or physiological standpoint, are far less complex than many morbid conditions unattended with nausea. Is the normal presence of the ovum in the uterus the one source of reflex vomiting? Surely not. What, then, may be again asked, is the peculiar condition of the nerve centres in pregnancy leading to nausea which cannot always be explained by the laws of reflex action, by pressure, by new exactions, or by any of the possible causes already enumerated?

May not the essential cause be found in the impoverishment of the maternal nervous system by the withdrawal of phosphorus for the growth of the uterus and its contents?

In order to substantiate this belief, let us consider several peculiarities of the nausea of pregnancy. Its occurrence or its intensity is noted so often in the early hours of the day, that it has acquired the title of "morning sickness." It disappears or diminishes, usually,

in the latter part of the day. It is frequently severe as soon as the woman opens her eyes and before rising. Nausea in general is, in most instances, worst when the patient assumes the erect position. This truth does not always hold in pregnant cases. During the night, the mother's system receives a compensating rest, it is true; but it is at the lowest ebb in the early morning; and, while the fœtus has been rapidly developing, the maternal storehouse has been rapidly emptied by its contribution of food in general and of phosphorus—the great tissue builder—in particular. The loss to the mother's nutrition has not been repaired. The morning meal, with the hot coffee and other stimulants—especially nervines—feeds and fortifies the loser, and her nervous system is temporarily relieved. Although in motion during the day, and subjected to its wear and tear, she suffers less. Diversion alone cannot explain the amelioration.

Another noticeable point is, that, with a few exceptions, the nausea is worse during the first half of pregnancy, when the maternal system is being exhausted, and when the fœtus is most rapidly developing. Subsequently, the mother's appetite and nutrition improve, the child grows less rapidly, and the sickness abates or ceases. There must be an intimate relation between these two conditions of mother and child. The mother's becoming accustomed to her state does not wholly explain the fact just stated.

Another feature of morning sickness is that it does not ordinarily begin at conception, but about the time when the fertilized ovum, after its journey of some days—possibly two weeks—has entered upon its intra-uterine growth. This goes to prove that conception in itself; and the immediate assumption by the nervous system of increased functions, is not sufficient to account for nausea. Incidentally, it is true that nausea is often observed during the first stage of labor, but here it is manifestly of reflex origin and due to the mechanical irritation of the cervical nerves by stretching. In early pregnancy, however, although the uterus is enlarging, still its mere increase of size, as previously stated, can hardly be responsible for the excessive systematic disturbance.

The decreased elimination of phosphorus by the kidneys is an interesting point. That the crystals precipitated by Tessier's fluid in the urine during early pregnancy may be imperfectly formed because of a deficiency of phosphoric acid, is not to be denied. I have always believed, however, and stated, that the irregular crystals were not pathognomonic of pregnancy, and that such appearances as have been described will be found in other conditions—such as nephritis—characterized by deficient excretion of phosphoric acid. I have seen the imperfectly formed crystals in the urine of males The corroborating lesson, so far as my own belief is concerned, is that the urinary analysis proves that the woman is not excreting the normal amount of phosphoric acid, although the amount furnished to the fœtus is another matter.

The verification of the theory advanced will depend upon the effect obtained by increasing the mother's nutrition. Careful attention to the digestive organs, with persistent or forced feeding, will be indicated, while it is not surprising that the administration of phosphorus should be suggested. The hypophosphite of calcium and sodium is, doubtless, in most cases, the most efficacious of the phosphorus salts, liberating the element most freely, in the best form for assimilation, and with the least probability of deranging the stomach. My experience has been, so far, too limited to justify any statistics, or to afford a practical demonstration of the theory; but, if the previous reasons and deductions be logical, I would ask for a trial of the plan of treatment recommended.

A nauseated patient is not easily made to assimilate, and the stomach must be controlled by appropriate agents, in order that nourishment may be retained, digested and absorbed. In short, the nervous system must be quieted and supported. In order to fulfil both indications, the bromides or other nerve sedatives can be used in conjunction with the hypophosphites. In this way will the nausea of pregnancy be viewed and treated as a functional and typical neurasthenia.

Failure to accomplish the desired result in any given case, or, indeed, in all cases, would not necessarily refute the argument of which the treatment is an outcome, since we may fail to remove a condition the primary cause of which has been ascertained. But if the views expressed prove to be erroneous, I shall not regret the endeavor to add to our knowledge or to subtract from our ignorance.

6 *East Grace Street.*

A PLEA FOR EARLY DIAGNOSIS OF AND EARLY OPERATION FOR CANCER OF THE UTERUS.*

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Honorary Fellow of the Medical Society of Virginia, etc.

Through the courtesy of your honored President and Committee on Invitations, we are permitted to bring to your attention a subject that has given to our profession the greatest amount of food for thought, and to the human family, both in mind and body, suffering in the highest degree. I speak of cancer, and particularly as it affects the uterus. It has been stated by many writers, that about forty per cent. of cases of cancer in women are located in the uterus. And as only about two per cent. of these primarily attack the body of the organ, our remarks will be in consideration of the disease being localized in the cervix uteri.

Cancer of the uterus or of the breast is in the thoughts of nearly every woman, and is rightly held by them as being the worst calamity to which they can fall heir. The feeling of helplessness by those afflicted and by their attendants, and a belief that a revolution for the better is possible, has prompted me to take advantage of this occasion to appeal to our profession to put forth extra efforts to the end of robbing this terrible disease of many of its victims. I hope that what we will say will be received in the kindly spirit in which it is offered.

It would appear that it is within the power of the medical profession to cure nearly all these cases, as we will attempt to demonstrate, and we wish to suggest some of the directions to be followed in this undertaking.

The ravages made by cancer have always been so terrific that not a civilized person lives that is old enough to realize the meaning of the word disease, but remembers vividly some friend, or, perhaps, near and dear relative, that has succumbed to its fatal influence. It is the opinion of the general public that a person afflicted by cancer is beyond all doubt practically struck with death. And we are sorry to state that this opinion is still shared by a large number of physicians. We are frequently forced to recognize this fact when in consultation in such cases, we are told by the attending physician that he is opposed to operation in cancer cases, because all of them die of it sooner or later, and that operation is putting the patient to that much additional torture. Even some surgeons have about the same ideas on the subject. Bouilly,[1] writing the present year, says he doubts any case being cured by operation.

That this condition of affairs exists is due to many causes, some of which we will briefly note in passing. Generally, cancer of the uterus is not discovered until hope of its eradication is no longer with the surgeon. Again, the patient and her friends have discovered the true nature of the disease, and have unhesitatingly decided the patient has nought to do but await as patiently as possible for death to end the suffering. Or, perhaps, cases have been operated on too late for complete relief, in which too much encouragement has been given by the operator. The general results from cancer no doubt have always been bad, and the public cannot but know this by comparing experiences. Perhaps some cases have been discovered late and have been refused operation, or others seen too far advanced for radical operation, and have or have not been given the advantages of temporizing surgery, or have been treated too long expectantly without diagnosis. Many of us know of cases in which the diagnosis was made fairly early—sufficiently so to make them of the border-line order, and operations have not succeeded in eradicating the disease, death occurring from cancer at a delayed date. And again, cases are operated on so early that the surgeon has the utmost confidence in his having eradicated the disease, but is doomed to disappointment by its return in one, two or three years, and death at last claiming its victim by the same agent. The result of all this is that many women refuse operation when the surgeon is very confident that eradication is practicable.

But why does the family physician believe that cancer is incurable, and that the patient had best be left to her fate at whatever stage of the disease it is detected? We imagine it is from practically the same reasons that control the sufferers and friends.

He has had a few sad experiences. His cases of cancer have been seen or recognized late. He has, perhaps, had a few operated on late with return of the disease and fatal termination. Perhaps he has been blamed by the family for giving his consent to operation, under the belief that the family physician stands as a protector of the family from "the ruthless hand of the destroying surgeon," and that no operation is to be thought of unless suggested or urged by the family physician. No doubt many operators have been too timid—

*Read before the Medical Society of Virginia, during its Twenty-eight Annual Session at Hot Springs, Va., September 2nd, 1897.

perhaps not a reprehensible attribute in other diseases—and fearful of injuring the ureters, bladder, bowel and other neighboring tissues, have not removed as much of the surrounding structures as was possible in vaginal hysterectomy.

It is quite possible the general practitioner is not aware of the constant progress made in the curative treatment of this malady; has not kept informed of the work as it has been done, and is, therefore, not aware of the many cases of cancer that have been relieved for a number of years by operation. Then, too, there may exist a feeling among general practitioners of medicine that surgeons desire to operate on every disease, and that their judgment is, for that reason, unreliable on border-line cases; that there exists a sort of "cacœthes operandi" among surgeons. If this feeling does exist, it is very limited, and is to be regretted, for the work of the surgeon and of the physician should go along smoothly, both working for the welfare of humanity. Surely the work of the surgeon should not begin when drugs have failed. We should all work together in united attempts to bring relief to this class of patients, and no one can doubt that in surgery lies all that can be done for the cure of cancer in any part of the body.

It is well known that women are very diffident, and, hence, more apt to allow diseases of the breast or of the pelvic organs to progress markedly before asking for relief by the family physician or the surgeon. With such a disease as cancer, we all know how bad have been many cases we have seen for this very reason.

How often we see cases of cancer of the uterus—and the same holds good of breast cases—in which symptoms date back one, two or more years, without the attention of the physician being called to them, and then too late. It is just as well to mention here that some cases come to the surgeon from the family doctor for operation that he has been treating unsuccessfully for months with a different diagnosis, and, after much delay, expects us to operate.

But perhaps a temporizing operation is done, and the patient dies from return of cancer. It is now heralded broadcast that the operation was unsuccessful, and another affidavit of the incurability of cancer is thought to have been gained. For this reason, we have often thought it might be best not to operate in cancer unless we were confident of radical cure by it. But when some suffering woman has come to us, and we have been sure a cure was impossible, the desire to give her an easy and delayed death has prompted us to operate.

In the face of all these impediments, wonderful progress has been made in the surgical treatment of cancer of the uterus.

We have reached the opinion that total extirpation of the uterus for cancer of it is much better than amputation of the cervix, an operation very popular up to a few years ago. The mortality of vaginal hysterectomy has been reduced very materially. From a former mortality of from 60 to 90 per cent., it has been brought down to about 5 per cent., and even less than 4 per cent. of deaths is the record of some operators who have done a large number of operations. This improvement has been gradual. Fifteen years ago, the death-rate had been cut down to 40 per cent.—then further reduced to 29 or 30 per cent. In 1885, it was further reduced to 8 per cent. Even earlier individual operators were doing this operation with a mortality of one in ten.

We come to Kaltenbach's[2] list of 159 cases, with a death rate of 3.9 per cent., and Olshausen's[17] 139 cases with three deaths, the last 100 containing no deaths. We might add our little drop of water to the ocean of evidence by saying we have done sixteen vaginal hysterectomies for cancer without a death.

In 1881, Olshausen[3] collated forty-one cases, with 29 per cent. mortality. Gusserow[4] says: "According to a table prepared by Hahn[5], in 1882, out of forty-eight cases total extirpation per vaginam, 29.1 per cent. died; that Hegar and Kaltenbach[3] mention twenty-nine cases, eight of which died, a mortality of 27 per cent.; that Czerney[6] found twenty-six deaths (32 per cent.), in eighty-one operations; Duncan, 276 cases, showing a mortality of 28.6 per cent.; Sanger[7] found a similar mortality rate in 133 cases, and that they had found records of 253 cases of this kind, with fifty-nine deaths—23.3 per cent." Pfannensteil[8] found that in 154 operations, done up to 1882, the mortality rate was 23 per cent.; whereas, in thirty-six operations, done since then, it had fallen to 8.3 per cent. In 1882, Engstrom[3] collated 157 cases, with sixty-six deaths—29 per cent.; while in a table in Hegar and Kaltenbach[3] 267 operations with sixty deaths—23 per cent., are mentioned. In this table, four operators, doing fifty-two operations, with three deaths, have a mortality rate of less than 6 per cent.

W. J. Sinclair, who wrote the most excellent article on cancer of the uterus in Allbutt and Playfair's *System of Gynecology*, 1896, says Krukenburg did 197 vaginal hysterectomies for cancer, with twenty-five deaths—12.7 per cent.; Terrier and Hartman, thirty-six cases, with 23.5 per cent. death rate; Richelot, 1892 (four years' work), 225 cases, with eleven deaths

—less than 5 per cent.; Burkle, 1892, gives a summary of operations, mostly German, up to that date, 273 operations, twenty-seven deaths —10 per cent., and Bucheler published Kaltenbach's 159 cases, with a mortality of 3.9 per cent.

Lanphear[9] reported ninety-seven operations, with fourteen deaths, and says his high mortality rate was due to his early enthusiasm, and that he operated on cases too advanced for any hope of survival—cases he would not now subject to operation. Kelly[10] in 1885, reported thirty-eight operations, with five deaths—13 per cent.

Thus it will be seen that the mortality rate of vaginal hysterectomy for cancer has been brought down to the neighborhood of 4 per cent. from the high death rate of former years.

Ultimate Results.—We certainly have great encouragement for the future of radical operation for uterine cancer from the work that has been done during the past five years, and from the modifications that have been proposed and practiced by Kelly[11] and others for the still further removal of tissue in the immediate neighborhood of the diseased organ, and which experience and dissections have shown to be the first invaded by a return of the disease.

Many writers are already claiming 50 per cent. or more cures by vaginal hysterectomy, and we have reason to believe that by the end of another decade the number cured will be fully 75 per cent. of the cases operated. When we consider that Leopold[12] found in seventy-six cases of his that remained under observation, seventy-two were still well from one to five years after operation, and that a large percentage of cases are now operated on for temporary benefits, being recognized as incurable at the time, it will not be difficult to realize the probability of this prediction. This is even higher than the percentage of immediate recovery from the operation a few years ago. These expected results will come from a better selection of cases for operation which require exclusion of those in which much doubt exists as to the extent of disease beyond the uterus; improvement of the operative technique, and the removal of more of the lymphatic structures of the utero-sacral, round and broad ligaments.

Lanphear[9] speaks of eighty-three cases in his list that were successfully operated on, of which twenty two have lived more than three years, and forty-one still within the danger period. Eastman[13] speaks of curing 50 per cent. of his cases, and Martin[3] found that of the sixteen cases operated on by him before the end of 1882 eight remained healthy at the end of 1884. Fritsch[14] had 36 per cent. of cures at the end of five years; Hoffmeier had no return after four years in 33 per cent. of his cases, and according to the same authority (Baldy[14]), at the end of two years Schauta, of Prague, found 47.3 per cent. of his patients free from the disease; Olshausen, after the same length of time, reports nineteen out of forty without a relapse, and that the careful statistics of the Dresden Klinik exhibit the following remarkable results: Of eighty patients examined over two years after the operation, forty-five were without any recurrence; of fifty-eight patients examined after three years, 58.6 per cent. were well; of forty-two patients after four years, 59.5 per cent. were found free from the disease; of thirty after five years, 60 per cent.; of nine after six years, 66.6 per cent. had no return; whilst two women who had survived the operation seven years, were perfectly well. Kelly has probably cured about 65 per cent. of his cases. Of our seven cases that have been done more than two years but three have had recurrence, and all of these were considered incurable at the time of operation. One of them recurred two years and two months after operation in a case that we were told had previously been demonstrated in a clinic as incurable and cauterized.

The experience of those who have had most to do with cancer of the uterus has proven that the proper treatment of this disease is nothing short of radical operation, whether by the vagina or through the abdominal incision. Amputation of the cervix, no matter how high, gives very slight hope, indeed, for cure and the cauterization, as done by Byrne, has not been accepted by the surgical world as an operation equal to total extirpation of the uterus. This being the present condition, the two chief points are to discover the disease very early, and to operate sufficiently early. It will be necessary to remove the uterus, appendages, and as much as possible of the surrounding tissues. That more care has not been taken in differentiation of the varieties of cancer of the cervix in the individual cases is to be regretted, though this is not convenient or even possible in all cases. While the treatment would be the same in all varieties, yet a difference in the progress of them would permit of more intelligent prognosis in individual cases.

Early Diagnosis.—The burning question is how to diagnose these cases early enough to permit complete extirpation of the diseased structures. Various suggestions have been made for the earlier diagnosis of cancer of the cervix. Among others, Kelly[15] has suggested

some very practical rules, among which are the following:

Patients, after labor, should be seen at the physician's office every two or three months, where he should examine and make a careful record of the condition of the pelvic structures, noting accurately what lesions have been produced by labor. Cervical lesions should be carefully described, particularly the position and depth of the tear and the appearance of the lips. Lacerations require no treatment when the lips are thin, uninfiltrated, and lie together; but when the lips are thick, infiltrated, and everted, and there is cervical catarrh, depletory treatment is indicated, to be followed by repair of the laceration. Every woman who has passed thirty-three years of age, and has borne a child, should have this examination made without delay by a competent physician; and if the cervical lips do not appear perfectly sound, she should be kept under observation and examined at intervals of six to eight months. Every woman over thirty-five years of age, with a cervical tear, should be examined at least once a year for ten years or longer if the appearance of the lacerated area is not perfectly healthy. Every woman with a family history of cancer, who has a lacerated cervix, no matter how slight, should be examined by a competent physician every six months. Robb[16] says: "When we see an elevated area differing a little in color from the sound mucous membrane, and tending to bleed freely upon the slightest touch, we should look upon it with the gravest suspicion, and if it feels hard and nodular, and upon a second and third examination, at short intervals, shows a tendency to extend, it should be removed without delay." We would go further and say the uterus should be removed without delay. To these suggestions we would also add all cases that have any of the so-called symptoms of cancer, such as occasional bloody discharge from any cause—for instance, being on the feet a number of hours at a time, going up stairs, after walking, after coitus, and many others. Pelvic pain and considerable vaginal discharge, especially in women over thirty years of age, should also excite suspicion.

This disease is so dreadful that the family physician should always have in mind the possibility of it in the wives and mothers among his clientele. It is not many years since it was a rare occurrence for ruptured tubal pregnancy to be noticed. We all remember the most excellent work done by Dr. Formad, coroner of Philadelphia, and the effect it had upon the medical profession. The same injunction was placed upon the family physician concerning the diagnosis of that condition as we would now place upon him in relation to cancer of the cervix. We well know the most magnificent result of that appeal. Now every doctor knows what ectopic pregnancy is, to what great dang r the unfortunate possessor of it is subjected, and what should be done, and quickly done, for their relief. They are recognizing cases as they occur, and operating or sending them to the abdominal surgeon for that purpose.

If they are strongly impressed with the necessity of early diagnosis of this terrible disease, cancer, and surgery demonstrates to them the favorable results that may be expected in early operation for it, then we may expect the same results for it as for ruptured tubal pregnancy. When all this has been brought about then truly we have nearly rid the human family of one of its most deplorable and foul afflictions. To carry out these stringent rules for early diagnosis, the general practitioner will have considerable trouble, for the conditions are not such as are met with in ruptured tubal pregnancy. The patient will not be almost in the pangs of death when the doctor is called and does not realize the gravity of the condition. It will be, therefore, difficult to procure permission for careful examination, and much more so to convince the patient of the danger of following a non-operative course. It will, no doubt, be troublesome at the beginning to get permission of women suffering but slightly to make the requisite examinations; but patience and determination should be added to careful explanation of the necessity for them, and in donbtful cases the advice of the gynæcological surgeon must be requested. It is even much better to remove a suspicious uterus than to allow cancer of this organ to become uncontrollable by long delay in making a diagnosis.

It is deprecable that so much importance is attached to the menopause as accounting for the various symptoms of late cancer that is so prone to occur coincident with it. The belief is well grounded in the minds of the people, unhappily not alone to the laity, that the change of life is accompanied with various pelvic pains, metrorrhagia, menorrhagia, various vaginal discharges, and perhaps with loss of flesh and even cachexia. Patients are told by friends, and perhaps by their physician, that all these symptoms must be expected at this period in her life, and that as soon as the change is over they will regain their usual health.

Alas! How many women we have seen that have found this to be a delusion—and too late for rectification. Many women have been afflicted with this disease in the cervix, and have been treated locally for months for an "ulcer." This we have seen repeatedly Cases have come into my services at Columbia and Providence Hospitals, in Washington, that have been bleeding from a cancerous cervix for eight or ten months, and during all this time been treated without an examination. But this is not the case with a majority of cancer patients Some of them have had very little inconvenience up to the time the disease has been found to be too far advanced for extirpation. Pain is not by any means a constant symptom of cancer, and, like hæmorrhage, does not usually begin until a considerable destruction of tissue has occurred. Vaginal offensive discharges do not begin usually until this stage of the disease has been reached, except in the cauliflower variety. Therefore, the three symptoms—pain, hæmorrhage and offensive vaginal discharge—commonly considered cardinal symptoms of cancer of the uterus, are very seldom present until the disease is well nigh incurable. We do not rely very strongly upon microscopical examinations for diagnosis, believing in nearly all cases it is better to operate when in doubt, especially if the patient be advanced in life and in condition to withstand the operation. We have known of cases that died of cancer of the cervix a few weeks after the microscopist reported no cancer in a piece removed from it with the scalpel and applications of cocaine. Then, too, often the tissues removed for microscopical examination are from a too superficial portion of the uterus.

It is not always easy to diagnose cancer of the cervix in its early stages, but we wish the general practitioner to have constantly in his mind the possibility of the presence of this growth. We must remember there are three different forms in which the disease occurs in the cervix, beside the regular cancer in the connective tissue cells. These three kinds are by involvement of either the squamous epithelium of the vaginal surface of the cervix, the cylinder epithelium within the cervix, or from the glandular cells lining the cervical glands. They are, therefore, called epitheliomata. It may appear as a superficial or ulcerating affection of the mucosa, as a nodular or parenchymatous growth, or as a papillary or cauliflower growth. The cauliflower usually spreads towards the vagina, beginning in the vaginal surface of the cervix, and may give rise to a small amount of vaginal discharge, perhaps not enough to excite the attention of the patient. In an early stage of the nodular form the small nodules just under the mucous membrane lining the cervical canal can be felt with the finger. These may be confounded with small myomata or with cystic degeneration of the cervical glands. However, they are not so firm as the myomata, and are surrounded by a firmer tissue. From the cystic glands mentioned we can readily distinguish them by specular examination, which usually demonstrates the presence of the contents of the cysts and if they are punctured by its discharge. When these nodules appear on the surface by the destruction of the mucous membrane covering them, we have no doubt as to their character. We may get considerable discharge with more or less admixture of blood and having a more or less offensive odor. The superficial form soon loses its covering and appears as an ulcer that can be usually distinguished from chronic catarrh of the cervical canal by its sharply defined and dentated margins. It generally bleeds more freely when touched by the finger or instrument, and it becomes progressively deeper as it invades the deeper structures. In all forms of cancer of the cervix, the finger can usually remove pieces of tissue very easily. By careful study of these conditions of the cervix, the general practitioner can soon be able to make a diagnosis or detect the suspicious cases, which should be presented to the surgeon for his opinion, and, perhaps, operation.

To us, it seems that with careful work done along some such lines as suggested in this paper, that these cases can be discovered very much earlier than has been the experience in the past, and the attention of the surgeon drawn to them at a sufficiently early stage of the disease to give us great hope for the eradication of the diseased structure. If this be done, then will be achieved what we are all seeking, and the terror of this dread disease of the uterus be removed in a very great degree.

I appeal to every physician in this room to study and work energetically to the end of doing this grand work in the interest of humanity.

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A PLEA FOR CLEAN SURGERY IN MINOR AND EMERGENCY CASES OF THE GENERAL PRACTITIONER, WITH SOME PRACTICAL HINTS.*

By HAMILTON P. HOWARD, M. D., Alexandria, Va.

On first receiving the honor of a request, which I could but feel was a kind permission, from our Secretary to read an article before this body, it was my inclination to report some cases which, by the kindness of Dame vis medicatrix naturæ and the application of the beautifully simple principles of clean surgery, I felt might bring me credit. On second thought, I determined to deny myself this gratification, and put aside my notes on cerebral surgery, amœbic abscess, with a few cases and many references; and if I can impress upon those whom I would reach, and make clear to them for application, some practical suggestions, I shall be far more than repaid for the self denial above noted.

It is to the general practitioner that I would appeal—to those who, in our profession, I most honor, taught first to do so by one known and loved by many of us, that eloquent and early apostle of antisepsis, James L. Cabell, and later by my own observation. That great teacher once said to me, referring more especially to those of our associates whose field is rural, "Of all physicians, they are the most deserving the admiration accorded and due our profession; theirs is to do battle single-handed—no specialist near—with all forms of disease; on them the greatest demands not only for general, but indeed universal knowledge in the many divisions of our constantly broadening fields of labor, and on them also the most frequent calls in devising means for meeting emergencies, demands which, in frequency and scope, are scarcely to be appreciated by their urbane brethren, in ready call of consultant, specialist, surgical appliances, and all drugs." It is, then, to the general practitioner that I would make a few practical suggestions, not merely as to how he may gain better results, and so reputation with its sequelæ practice and income, but to better perform the sacred duty of his profession, save pain and life in minor and emergency cases; the first of which naturally fall to his care, and with the second of which he should be prepared to do, to *any* surgical extent, should not another better qualified be in reach. For I hold that he is no whit less culpable who refuses the ultimate chance of an operation to his patient, through fear of criticism, than he who would, lacking the requisite experience and training, seek fame by undertaking tasks pertaining alone to the high priests of his scientific art. Says Gerster: "The attempt of removing a tumor should be permitted to those only who have learned to invariably heal a fresh wound by primary intention, as this is the *first* and *sole* test of the possession of the ability justifying such a grave undertaking." The application of the converse of this statement in modified range I shall touch later.

Minor cases being those most frequently, and, as already observed, naturally demanding the attention of the general practitioner, it is hardly necessary to state that it is his duty and obligation to be always *prepared* to treat them in accord with the best principles of our art; and he indeed fails in his duty to his patient and his profession who does not secure in most cases, as in fresh incised, punctured and lacerated wounds, repair by primary union, and under one dressing; thus saving his patient not only pain and fever, but what is of far more and indeed supreme importance, insuring him against the *chance* of the most serious sequelæ of even the slightest dissolution of continuity—septicæmia and pyæmia.

No wound is slight, nor is it to be slighted; it may be the atrium for the introduction of that which to the surgeon is alone not "clean"—the schyzomycetes—the death-bearing agencie.—lethal not only locally, but systemically. By attention to clean surgery and minor work, the general practitioner will not be badly fitted to face such major work as emergency imperatively demands that he should have courage to undertake; he will indeed be better justified in so doing than many whose daily task it is to perform some of the special surgeries—for the lack of experience in the mechanical technique

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of the one being less of a bar than the lack of surgical cleanliness—aseptic technique of the other. Do you but give to the healing power of nature that aid in your power in preventing interference with her beneficent work by extrinsic hostile agencies, and you may rest assured of results surprising to yourself and astounding to the laity—results which will bring to the conscientious healer not only that beyond price—knowledge of duty done to patient and profession—but eventually the price also.

It is not the purpose nor province of this article to enter into the question, if question there be, of asepsis; but assuming its general acceptance, to urge its general application; and further accepting that the very essence, life, indeed prime principle of modern surgery—the synonym of clean surgery is asepsis—we naturally come to the question how asepsis may be attained, how invariably assured. Asepsis is to be attained only by the thorough application of antiseptics—to be maintained only by the minute and absolute attention to the details of clean surgery; never forgetting that all is unclean to the surgeon which he has not good reason to believe is sterile.

I do not intend to enter into a discussion or consideration of the various antiseptics or of the rationale of their action, but accepting authority, and having urged and plead for their application, to now suggest some practical hints, by attention to which clean surgery may be obtained in minor work, and having become a *habit* in this class of cases, will be assured in such major work as the general practitioner is called upon to perform.

First, then, concerning minor work.

Your hands, though spotless, soft and white, and but just washed and dried on a freshly laundered towel, may be surgically filthy. Adopt some one of the various accepted methods for cleansing them, as bichloride, permanganate, and oxalic acid, etc., but don't dry them afterwards on a non-sterile towel, and don't cleanse the nails with a knife which may not be clean any more than you have scrubbed them with a brush unclean from its last use

Remember that "rinsing" in bichloride is a farce—laughable—but that it is criminal.

Don't grudge the time necessary to prepare to do "clean" work, as in the preparation of your "tools," viz: Instruments, needles, sutures, solutions, applications, and dressings.

All instruments should be sterilized twice after each operation and before. Boiling in soda solution [ʒjss–Oij] is as good a method as you can use. Boil for five minutes If you cannot boil an instrument, passing through any flame will sterilize it; fresh soot is not unclean surgically.

Having cleaned your instruments and hands, do not soil them by contact with an unclean site of operation; this should be as carefully cleansed as your hands—by scrubbing and the use of some accepted antiseptic; remember bichloride will not act in the presence of grease, and that alcohol or ether will remove that substance.

Hands, instruments, and sight of operation being now clean, viz: sterile, do not soil them by contact with immaculate towels, bed clothing, or portions of your own or patient's body not prepared for operation; let not that which is clean touch anything that is unclean, use only sterilized water for irrigation in non septic cases. Rely more on amount of the irrigation fluid used in septic cases—that is, on its mechanical antiseptic action rather than its chemical properties, and aid its thorough application by force of stream and, where feasible, by "rubbing it in." Don't irrigate from a fountain syringe nozzle which has not been boiled since last used, and don't hang nozzle in mouth of bag when not in use; if, by mistake, you have done this in a septic case, don't use bag again until sterilized.

Don't use a pocket case which you cannot sterilize; the leather velvet-lined case is an "omnium gatherum microbium." Don't use an instrument having a wooden handle until you have removed the wood; the best handles are flat with square edges.

Don't be stingy with the number of sutures nor of your patient's patience in placing them; consider that you are to be judged by cosmetic effect.

Don't use adhesive strips, or if at all, not so as to touch wound; they are always of doubtful cleanliness. Don't use iodoform or other dusting powder that you have not sterilized by "cooking," and don't consider expense in its use.

Don't be stingy with your gauze and absorbent; of the former, plain as good as any, but don't rely on the reputation of the house that bottled or boxed it; "cook" it yourself.

Don't think that absorbent from pound package is made clean for swabs by *dipping* in bichloride Sterilize them beforehand by boiling or cooking.

Don't consider any wound too small for the entrance of the death-bearing agencies, or that slight pain and inflammation do not matter: they are infallible witnesses of carelessness and disregard of duty.

Don't dress your wound under five days

unless throbbing pain, fever, or redness be present, or unless you have used drainage, which do only when you cannot be sure of your wound being clean.

Don't be ashamed to be considered by any as finiky; *quiet* attention to detail need not involve fussiness. Consciousness of duty performed will well repay for the sneer, that you are making a big show; for a small neat scar, soon to disappear, and a painless result will in time convince the laymen that it is not so much what you have done as the way you have done it.

I have finished with Dont's. I have but one Do. Do be clean. Asepticism, clean surgery, to be effective, must be perfect, or it is useless. It is only to be attained by absolute and minute attention to detail. One streptococcus pyogenes is only 0.7μ in diameter, is autogenous, and will, if applied with suitable pabulum and conditions, beget in twenty-four hours a family which would fill the Atlantic.

So much for clean surgery in minor work. We come next to such cases of major surgery as he may have to undertake under circumstances and surroundings less favorable than those which he could demand for his minor work.

Such attention to cleanliness as we have suggested under minor work, may best be attained for emergency cases, so far as your instruments, applications, dressings, hands and site of opetion are concerned, by your providing yourself with an emergency bag; and it will well repay you the slight outlay required, not only in a pecuniary sense, but in others which I have in the early part of this paper touched upon. And let me here urge most earnestly that it is as much your duty to possess such a bag and to have it always with you, ready for use, as it to have a pair of obstetrical forceps; I am speaking now more especially to the country doctor. There are many emergency satchels now on the market—some, perhaps all, beyond the means of some of our ill-paid number. But surely there is not one of us who could not afford a bag, say six by ten inches, in which were two scalpels, one dozen hæmostats, one or more pairs of strong scissors, with aseptic lock, three sizes of Murphy's buttons (in case of strangulated hernia requiring re-section), a carefully selected two dozen needles in a wide-mouth bottle (two of these needles of a size suitable for Czerny's sutures), one box of sterilized iodoform, six feet of rubber tubing, a half pound of absorbent cotton, one bottle of drainage tubes, one bottle of bichloride tablets, three two-ounce packages of plain gauze (cooked), four ounces of ether or chloroform, two ounces of peroxide, one trephine and elevator, all carefully wrapped in a sterilized towel, and six small sterilized towels wrapped in oiled paper or silk, laid on top.

Having such a case which may be sterilized by formaldehyde vapor, what are the emergency cases which you will have to meet? They are few in number, where such a case is required; and by a seemingly provident provision of nature, they are the very ones where few instruments are needed and beyond these only cleanliness demanded. Cases requiring amputation can wait; compound comminuted fractures involving joints can be cleansed and wait.

The usual emergency cases requiring the above *vade mecum*, are chiefly strangulated hernia, ectopic pregnancy, head injuries, tracheotomies, injuries to arteries, suprapubic cystotomies (in retention of urine); Cæsarian section, in deformed pelvis, I think to a clean man is safer than craniotomies.

Therefore, it is your duty to be ready to do at once that which is in your power for those whom you have asked to place themselves with their lives in your hands. But you say, "We have not the surroundings which you gentlemen in hospitals have." True; and here it is that your ingenuity must be taxed. Boiled water is sterilized water. Baked towels, no matter if scorched, are sterilized. You have in your satchel means for sterilizing your site of operation and your hands. In your dressings you have the agents for prohibiting the entrance of the morbific agencies inseparable from your unfavorable surroundings.

Gentlemen and fellow-workers, if you have learned to do clean minor work, you will have but little trouble in substituting vegetable dishes and plates, sterilized by boiling water, for the porcelain utensils of modern operating rooms; an ordinary chair will secure for you the famous Trendelenburg position, and the pure air and water of your rural surroundings, far freer than ours from antagonistic influences are in your favor; that pure air and water, which, by having given you in many cases, conditions of cleanliness under which some of you have succeeded in spite of your own carelessness and inattention to asepsis, and so been led to doubt the necessity of it, while we who have had to fight for it in cities and hospitals by the use of agents, thermal and chemical, have had ample proof of its needs. These conditions will indeed help you, but yours is the responsibility for all inflamed wounds, all suppurating stumps, which reli-

ance on these advantageous conditions and ignoring of surgical cleanliness result in. And further, and not without hesitancy, and very solemnly I say it, yours the responsibility for those cases which "pass on," you having refused the chance of operation, when had you but learned the principles of to-day's surgery, of clean surgery, you would not have feared nor held back from giving what is so often the last but surest chance of life.

If cleanliness is akin to godliness, surely it is the very essence of the surgical deity, and he is indeed impious who neglects his service at the altar which our modern art has raised to chirurgeon.

CANCER OF THE BREAST, AND ITS RADICAL CURE.*

By C. E. RISTINE, M. D., Knoxville, Tenn.

Since the introduction of the germ theory of disease, I have watched with interest the progress of investigations along this line, hoping for a possible solution of the cause of cancer, which, if it can be learned, would greatly assist in directing our intervention.

During the last four years, numerous investigators have endeavored to demonstrate the parasitic nature of cancer, there being presumptive evidence of such an hypothesis. New facts have accumulated, and observations of great interest have been collected, and various ingenious theories have grown out of these investigations; yet, in spite of the enormous amount of time and labor spent in this direction, it remains a matter of speculation.

The theory of the medical profession at large inclines toward the parasitic origin of cancer; it may be stated, however, that up to the present time sufficient evidence has not been produced to establish a single claim for this opinion. Among general surgeons, the tendency is to regard cancer as contagious, which implies infectious. It only remains to be shown that particles of cancer in various stages of development, fragments of the tissue harpooned, crouched and injected into the cellular tissue;[1] cancer juice;[2] and extracts prepared after the manner of organic extracts,[3] have been inoculated into the various tissues of dogs, guinea-pigs, rabbits, and rats, and the result has proved the innocuous character of this material.

Dogs have been the favorite animal for these experiments, since it is a fact that all the varieties of malignant tumors observable in man have been found in dogs.

Very recently Fischell,[4] undertook a series of experiments on the transmission of malignant disease from man to rats.

He had recourse to subcutaneous intra peritoneal, and intra-venous inoculations, using twenty-three rats, every one of which proved a failure.

About the same time, Drs. Duplay and Cazin (Paris) published the result of their researches on the inoculability of human cancer to animals, and from one species of animal to another. Quoting their words, "These researches comprise a total of forty experiments, followed up in each case for from six to eight months. As this period of time might possibly be too short, we kept some of the animals experimented upon for a much longer time. They have since been killed, but in none of them did we succeed in discovering any cancerous formation."

A few observations have been reported by modern authors as cases of contagion from man to man; for instance, Dr. Guilliot has collected twenty-three cases of cancer of the penis in the husband consequent on the presence of uterine carcinoma in the wife, observed by various authors and medical practitioners throughout the whole country. Such statistics deserve consideration, but they cannot be regarded as conclusive evidence, by any means, of the contagiousness of cancer, on account of the enormous disproportion between the frequency of uterine carcinoma and cancer of the penis. On the other hand, out of one hundred and thirty-four cases of penile cancer, collected by Demarquay, in only one was the patient's wife the subject of uterine carcinoma.

And just here I may make mention of the illustrious surgeon Alibert, who inoculated himself and four other persons with cancer; although the experiment gave negative results, he has had few, if any, imitators. In selected cases, I believe cancer to be auto-inoculable; these are represented by a confirmed systemic infection.

There is quite a school of enthusiastic believers in the theory that cancer is either caused by the presence of bacterium, coccidium, or protozoon. Dr. Braithwaite thinks it highly probable that it is caused by a micro organism

* Read before the East Tennessee Medical Society, at its Semi-Annual Meeting in April, 1897.

([1] Dubois (French Congress of International Medicine, August, 1896.)

[2] (Peyrilhe, 1773.)

[3] (Prof. Mayet.)

[4] (1890.)

—a fungus (not a bacterium, coccidium or protozoon) of a character which the author describes at length in a recent number of the *London Lancet.*

Probably the day is not far distant when the microscope will reveal to us the true nature of malignant disease, and having ascertained that, we can more intelligently seek out the prophylaxis, and a cure which will be less mutilating than the one now in vogue. Various factors have been cited as influencing the development of cancer. First, we mention *heredity;* it is variously estimated that between 4 and 13 per cent. of cancer patients have a family history of this disease in direct ancestry. Others think that heredity is entirely over-estimated as a cause. It being recognized as a factor, it is interesting to note the relationship to the individual parent. My observation has led me to assign all true cancer to paternal origin; and if you will take the pains to collect statistics on the transmission of cancer, you will be struck, as I was, with the frequency of male heritage I reason in this fashion: We know that true cancer is of epithelial origin, the free surfaces of the body are covered by epithelium, the largest example of which we have in the integument (skin). Now, it is a well known fact that the character of skin, hair, etc., are transmitted from the paternal side; as an example, the progeny of a white woman and negro man show the negro ancestry by the color and character of the skin. Again, the progeny of the negro woman and a white man show evidence of its white father in the color and other characters of the skin.

Traumatisms, chronic inflammations, and benigh neoplasms, can only be factors when they occur in an otherwise predisposed person. Any long-standing affection of the nipple or areola is a very dangerous condition, likely, in the course of time, to lead to cancerous degeneration.

It would seem but natural that the power of resistance in any individual to the morbid agent of a disease would be measured by the vital powers of that individual. The young and robust, therefore, should favorably modify the process. Such is the case in the infections and intoxications, but rather the reverse holds good in cancer—the younger the subject the more rapid the progress.

As to the diagnosis of mammary cancer, while not free from difficulty in many cases, we are justified in pronouncing all doubtful neoplasms to belong to this group; even cystic disease of the breast (which Mr. Thomas Bryan, of London, has so accurately differentiated from cancer), has been found in the majority of instances to be malignant. I do not consider it wise to wait for positive evidence, as valuable time would be lost; interference at the very earliest stage of infiltration will give us the most satisfactory results. Billroth says that "a solid tumor developing in the breast of a woman over 35 years of age, which continues to increase in size, is usually carcinoma. Small tumors, appearing from 20 to 30 years of age, movable and of slow growth, and painless, are usually the result of inflammatory action due to trauma or fibroids." It may be stated that a majority of tumors appearing in the breast of a woman 33 years of age are benign. After 33 years of age, I hold that every tumor of the breast, whether cystic, fibromatous, or what not, sooner or later undergoes malignant degeneration in one form or another. The relative frequency of tumors in the breast are, according to statistics, taken from 9,227 cases.

Cancer	77.6 per ct.
Sarcoma	4.1 per ct.
Non-malignant	15.6 per ct.
Cysts	2.6 per ct.

So it will be seen that in the breast the proportion of malignant to non-malignant neoplasms is 81.7 for the former and 18.3 for the latter. Some observers place the per cent. of malignant tumors as high as 90.

Ninety-nine per cent. of all tumors in the breast occur in females. A special cachexia is usually spoken of as diagnostic; this, however, in cancer of the breast I have never seen until a general dissemination had occurred—that is, involvement of other organs, which is usually accompanied by septic fever.

Metastasis occurs through the lymph channels in carcinoma, and through the blood channels in sarcoma; and, according to one authority,[5] in 16 per cent. the metastatic deposit from carcinoma occurs without infecting the lymph glands. In the order of their frequency, the metastatic deposits occur respectively (1) in the pleura, (2) liver, (3) lungs, (4) bones.

Kuster (who was the first to advise and insist upon the universal removal of all the lymphatic glands of the axilla), in 1877, states that in operations upon one hundred and sixty-three cases of carcinoma mammæ he found enlarged axillary glands one hundred and fifty-eight times, or in 97 per cent. Before operating, they could be felt in only 70 per cent. Strange as this may appear, the axillary glands being most constantly as well as the first to show evidence of infection, recurrence

[5] (Heidenheim.)

in this locality amounts to less than 5 per cent. when the glands have been removed; 85 per cent. of recurrences first manifest their presence in the cicatrix immediately over or very near the original location of the neoplasm.

Prognosis.—I know of no affection which has yielded so unsatisfactory results to both patient and surgeon as cancer of the breast. All statistics up to 1890 agree in showing that the outlook is gloomy in the extreme, 97.3 per cent. returning in some form within five years. The average life of a patient so afflicted may be set down at *less* than five years.

Paget says: "In deciding for or against the removal of a cancerous breast in any single case, we may dismiss all hope that the operation will be a final remedy for the disease. I will not say that such a thing is impossible, but it is so highly improbable that the hope of its occurrence in any single case cannot be reasonably entertained." Again he says: "I am not aware of a single clear instance of recovery—that is, with a patient who lived for more than 10 years free from the disease or the disease stationary." Hodges says:[6] "I have never known but one instance of seemingly prolonged life after removal of cancer of the breast," and this surgeon prides himself on his success in persuading women thus afflicted, who have applied to him for operation, to give up all idea of surgical interference.

Statistics of the ten years, between 1880 and 1890, furnished by Dennis, Reclus, Kuster, Poulson, Butlin, Senn, and Phelps, taken collectively, represent 27.5 per cent. of cures—that is, patients free from the disease three years after operation. Since 1890, more favorable results have been attained. Rotter reports to the Berlin Medical Society, 1895, that he had operated upon nineteen patients for the relief of cancerous tumors of the breast; in four years, of this number seventeen are still living without having presented recurrence of the mischief, local recurrence having occurred in two only.

The treatment of cancer of the breast at the present time is by one of three methods, viz: [1] sero-therapy and inoculation by toxines, [2] removal by cautery or caustics, [3] extirpation.

The *serum treatment* was introduced by Richet and Hericourt [Paris]. I believe its application to the treatment of cancer was first suggested by Dr. Paul Gibier [N. Y.], in a communication addressed to the Paris Academy of Science, 1893. Dr. W. B. Coley[7] [N. Y.] claims to be the first to suggest and use the mixed toxines of bacillus prodigiosis and erysipelas streptococcus. With the filtered culture of the above toxines he reports some interesting results [*Medical Weekly*, June 15, 1894]: "The first case was one of inoperable recurrent sarcoma of the tonsil; the injections were continued for some time without success, but finally a culture from a virulent case was used and caused erysipelas; the tumor ceased to enlarge, the general condition improved, and the patient is still living, three years after the beginning of the treatment." Again he says: "Those cases in which the disease [erysipelas] was not induced seemed to be as much benefitted as those in which it was." In all his cases he reports that in no case has the tumor disappeared when it was carcinoma, but in three out of 24 cases of sarcoma the tumor entirely disappeared. Dr. Matagne [Brussels] relates 14 cases of inoperable malignant tumors, which he treated by Coley's method, with the following result: one definite recovery, three incomplete recoveries, seven improvements, and three failures.

The results of injection of animal serum previously inoculated with cancer juice, according to Richet and Hericourt, give negative results, such as would be obtained after injection of normal solution. The danger of this treatment lies in the determination of intoxication, and increase in the growth and propagation of the tumor. A cancer, for instance, which has lain dormant will be given impetus to grow and proliferate after this treatment, and rapidly terminate in generalized carcinomatosis, such is the history of cancers so treated; probably five per cent. of supposed sarcomatous tumors will disappear.

The second means of treatment of cancer mentioned is that by cautery and caustics. Butlin, in St. Bartholomew's Hospital Reports, cites a record of 162 cases of carcinoma mammæ, treated by Bougard with caustic paste, in which the axillary glands were involved; according to Bougard, he had no deaths during the treatment, and he claims a larger per cent. of cures than by extirpation. The paste he used consists of flour, 60 gram.; starch, 60 gram.; arsenic, 1 gram.; cinnabar, 5 gram.; sal ammoniac, 5 gram.; corrosive subli., ½ gram.; solut. zinc chlor., 52 per cent., 245 gram. Butlin thinks it sufficiently successful to require notice.

Pyoctanin introduced by Mostig Moorhof, (Vienna), in aqueous solution of 1 to 200 injected into inoperable cancer, has some advo-

[6] (*Boston Medical and Surgical Jour.*, November 20, 1888.)

[7] (Personal Communication to Author.)

cates. Dr. Hue, surgeon to the Rowen Hospital, reports (*Medical Weekly*, 1895,) some experiments in the use of *injections of arsenic* in cancerous tumors of the breast; for this purpose he first used Boudins' solution (1 per 1000 of arsenious acid), and later the following mixture: Arsenious acid, 20 centigram.; hydrochlorate cocaine, 1 gram.; boiled distilled water, 100 gram., mix. One or two syringefuls of the above are injected into the neoplasm at intervals of from two days to a week. Several successful cases are reported under this treatment.

Dr. Planel (Rome) had under his care a woman with mammary cancer whom he cured by injection of arsenious acid.

In this connection, I am pleased to give you the essence of an article which appeared in the supplemental issue of "*La Semaine Medicale*" of very recent date, May, 1897.

The authors, Czerny and Trunecek (Prague), after mentioning numerous substances and forms of paste incorporated with arsenic, which have been used from time to time for the destruction of cancer tissue, speak authoritatively on the use of arsenic in special form; and declare that this substance, when used according to their directions, will always cure epithelial cancer (of course they mean skin cancer), and express the opinion that some modification of their remedy will be made in the near future which will cure all varieties of cancer. They tell us that it enucleates and destroys all the cancer element without affecting the healthy tissues. They first experimented with a mixture of arsenious acid and glycerin, but found the escharotic effect too severe, and the coating formed by the glycerin was impermeable to other applications of the same remedy, so they finally stopped at the following formula: Arsenious acid pulv., 1 gramme; alcohol ethylic; dist. water āā, 75 grammes. Mix, make sol. S; for external use.

This mixture is applied by means of a brush (badigeonuage—*whitewashed*) after the surface of the neoplasm has been made clean of all scales, scabs, or dead tissue and exudates. Sometimes, in order to clean the surface, a light curetting is done, and then mop the surface dry. A little blood on the surface does no harm, but free bleeding must be staunched before making the application. This treatment is extremely painful, but this should not prevent it remaining on until it would not run off by changing position. Subsequent applications are made (which are not so painful as the first) as required to destroy the neoplasm. The first effect is to produce a yellow color, and finally the diseased tissue assumes a brown and then a black color. No force should be used in removing the dead mass, but the small fibres which hold it, when raised, may be clipped; and, after removal of this dead mass, an application should be made to the raw surface left. Sometimes a solution of double this strength is used, where the surface to be treated is small and superficial.

I have now two cases that I am treating in accordance with the above, and will report the result when sufficient time has passed to warrant its success or failure.

M. F. A. Faflouse, *Province Medical*, May 18, 1896, reports having received in seven cases of cancer of the breast marked benefit in all by injecting into the tumor a solution of *salicylic acid*. The author used a six per cent. solution in alcohol, and from one to four cubic centimeters were injected in four or five different parts of the neoplasm. The writer says: "It is true the injections were painful, but the pain rapidly subsided, and there are no secondary unfavorable symptoms of any kind."

Among other therapeutic measures recently brought forward may be mentioned *alcohol*, which is used by injecting it around, but not into the tumor, in quantity sufficient to produce slight intoxication. Dr. Hasse (Nordhausen), by injections of alcohol—which he reports having used for upwards of twenty years—obtained complete recovery in the case of a mammary carcinoma (cancer en-cuirasse), which Volkman had declared to be incurable.

Phytolacca decandra, introduced by Dr. Goodman, United States, who states that he has carried out a series of experiments with the juice, and that it exerts a positive destructive action on malignant tumors.

The juice is obtained by reduction in a mortar and expression of the pulp of fresh leaves of the plant, which is evaporated until it becomes of the consistence of paste, and applied to the tumor on pieces of cloth sufficient to cover the mass, renewing (after washing the affected part) twice a day. The destructive action of this paste is manifested by sharp pain.

Methylene-blue, recommended by Dr. J. Darier (France) in 1893, has been used with some success both by Darier and Dr. Du Castel. Interstitial injections of a solution, composed of 1 gramme of methylene-blue in 5 grammes alcohol and glycerine; also a 20 per cent. solution of chromic acid is used alternately for the first four injections, which are made into the tumor, one only being given a week.

Dr. N. Denisenko, Principal Physician to the City Hospital of Briansk, commends the injec-

tion of an *extract of tetterwort* [*chelidonium majus*] into the tumor and around it. He uses a mixture of equal parts of extract of chelidonium, glycerin and water, one cubic centimeter divided into several injections.

Internally he administers from 1.5 to 5 grammes of the extract daily; considerable febrile reaction follows these injections. Satisfactory results from the use of the above are also reported by Dr. Robinson [France].

Numerous other agents have been tried with checkered results. A friend of mine, returning from a visit to New York, January, 1896, reports to me that he had the pleasure of seeing one case of inoperable carcinoma undergoing treatment by Dr. Rowe, with *injections of proto-nuclein into the neoplasm.* Dr. Bosworth [New York] was at the same time using proto nuclein in some cases of carcinoma. Not observing any report from these gentlemen, I assume that the experiments bore negative results. Up to 1889, the result of operative interference has been exceedingly unsatisfactory. Since the introduction of antisepsis and asepsis the results have been more satisfactory; yet these results have been far from gratifying our ambition, which is to be able to say to our patient, yes an operation will cure you. Now, let me give you my definition of a radical cure of cancer of the breast.

The removal of the cancer element so thorough, that its recurrence in that locality is prevented, and metastasis rendered improbable.

The cause of our failure heretofore in the operative treatment of cancer of the breast. I attribute to our inefficient knowledge of the anatomo-pathological condition of the tissues involved, its development and proliferation. One observer,[9] writing on this subject, says: "Primary cancer being the expression of a neoplastic degeneration of the epithelial coat of an organ, *partial* removal of this coat may be followed by a relapse through subsequent cancerous transformation of the epithelium left behind; for it seems perfectly reasonable to assume the existence, in the epithelium of this part, of the same disposition to neoplastic degeneration which existed in the part originally affected."

Another observer[10] examined microscopical sections of a large number of mammæ, in some of which the carcinomatous nodule was of very small size; he exceptionally met with normal tissue even in the remote portions of the gland, and between these lesions every degree of cancer development could be distinctly observed. Therefore, whenever a carcinomatous nodule exists in the midst of mammary tissue, be it ever so small, the entire gland may be said to be in a precarious condition; and the smallest portion of this tissue left behind in an operation, will, in all probability, be the starting point for a recurrence of the disease. Let me here impress upon you the importance of a recognition of the limits of mammary tissue. In 1893, I dissected the mammæ of six subjects, and found in all a prolongation varying in extent representing a lobe in the axillary region; in one subject a prolongation or tongue mammary tissue reached very near the clavicle, and in two of the subjects irregular sternal prolongations were noted. Dr. Paul[11] (Liverpool) exhibited to the Pathological Society of London a specimen of mammary schirrus which he had removed from the axilla of a healthy married woman, aged 29 years, which had infected the glands.

Later researches go to show that the enlargement of the lymphatic glands from cancer infection are subsequent to metastatic deposits which occur in the course of the lymphatic vessels before they reach the glands. This is especially true of the retro-mammary lymphatic vessels which conduct the lymph from the posterior portion of the mammæ by several vessels, which pass on to the axillary and subclavicular glands; and not, as Sappey would have us understand, that all the lymphatic vessels in the breast carr their contents to the plexus around the nipple, and from this plexus pass directly to the axillary glands. Indeed, there are still others known as the deep lymphatics, which carry their lymph into the anterior mediastinal glands, or into the lymphatics which follow the internal mammary vein, and empty into the lower and deeper glands of the neck. So you will see that more roads than one are open for the dissemination of cancer foci. Since microscopic investigation has revealed the existence of what Senn calls *carcinomatous lymphangitis* at a period so early in the development of the neoplasm in the breast, that no trace of its existence can be made by macroscopic examination, it is plain to us that to insure the best results, we should treat every case of cancer of the breast as though lymphatic infection was already present; remove with the breast every vestige of the lymphatic system in relationship with that mammæ; this makes the

[9] Weldenyer (Germany).

[10] (Heidenheim.)

[11] (Transac. London Patholog. Soc, 1894.)

operation quite formidable, as it necessitates the removal of one or possibly both pectoral muscles, as the lobules of the breast as well as the lymphatics are intimately connected with the pectoral fascia.

The chief objects to be borne in mind throughout the operation are: first, to get away every atom of the disease: this can only be accomplished by the sacrifice of all tissue which lies in proximity to the tumor, for owing to the amount of fat which is often present, it is exceedingly difficult to make sure that every particle of gland tissue has been removed, especially when the parts are obscured with blood. In order to bring out cancerous nodules or gland tissue that might be left behind, Stiles (Edinburgh) recommends the excised breast be placed for ten minutes in a 5 per cent. solution of nitric acid, which causes the parenchyma of the gland and the cancerous tissue to assume an opaque white color. According to Kummer,[12] this examination can be made while the operation is in progress, and enables the surgeon to make sure every particle of the affected gland has been removed.

Second object: To remove entirely the lymphatic tract between the breast and the axilla, and between the breast and subclavicular glands. The close relation which the neoplasm sustains to the pectoral fascia, and the knowledge of the presence of numerous lymph channels in this membrane, make its removal imperative. In doing this, however, I do not follow the advice of Heidenheim,[13] or W. Watson Cheyne,[14] who remove only the fascia and a layer of the surface of the pectoralis major muscle, but preferably follow the advice of Halstead,[15] or Rotter,[16] and remove the muscle entire, certainly the costosternal portion, which in no degree interferes with the function of the limb.

Third object: To clear out the axilla and subclavicular fossa. This should be done in every case of cancer of the breast, whether any enlarged glands are present or not; this work is facilitated by the previous removal of the pectoral muscle. Under the present method of operating, the patient has every encouragement, provided she submits to early interference. In this country, either the operation of Halstead or Mayer, or some modification of their operation, is performed. While they differ in detail, they accomplish very near the same result. Mayer begins at the insertion of the pectoral muscles and removes both these muscles entire, all the glandular structure in the axilla, together with the breast, all in one piece.

Halstead makes reverse figure-of-six incision, and, beginning at the sternum, removes all the pectoralis major, and the pectoralis minor is cut through about its middle, the upper half reflected, and the lower half with the fat and cellular tissue beneath it is removed, together with the axillary contents, finally all removed in one piece. Neither of these, to my mind, are ideal operations; while they both have points of merit, and their results are better than any of their predecessors, there is room for improvement.

The principle which we should never loose sight of from the very beginning throughout the entire operation is, to go far out into the virgin tissue, so far as to make it a certainty that the tissue remaining is not contaminated. The initial step, therefore, in the operation, is to *remove a sufficient area of skin* to insure immunity from this source. Where the tumor is located upon one side of the breast, the skin over that half should be sacrificed, together with the nipple, and at least an area of two inches of integument from the sound side. When the infiltration is central or near coextensive with the breast, I excise the skin of the whole mammary region, and by autoplasty or skin-graft, cover the raw surface.

Halstead had 19 per cent. of recurrences—the seat of the recurrent neoplasm being in every instance the skin. Again, in dis-ecting out the mammary gland, take care to get well above and below the limits of the breast, keeping in mind the frequent prolongations of mammary tissue in different directions. The skin should be dissected up from the fat and lobules of the gland as high as the clavicle, downwards to the origin of the abdominal muscles, inward as far as the middle of the sternum, and outward to the latissimus-dorsi. When we have finished the skin dissection, the pectoralis major should be removed from its origin to its insertion; in cases operated upon at a very early period, it will only be necessary to remove the costo-sternal portion of this muscle, after which, we use our finger or a blunt instrument and clear out the lymphatic glands, beginning at the apex of the axilla right up under the clavicle, which we can now reach with all ease, as the pectoralis major muscle has been removed, detaching the whole of the fat, lymphatic glands and vessels. It is important to remove all the tissue in one piece and avoid cutting through any tissue which may be infected.

[12] (*Med. Weekly*, 1897, page 85.)

[13] (Ibid.)

[14] Lettsomian Lectures, February 3–17, and March 2, 1896.)

[15] (Loc. cit.) [16] (Loc. cit.)

The next most important step is to co-apt the flaps and see how near we can close the wound. Viewing the wound with the arm raised as in the operation, it appears at first quite hopeless, but by bringing the arm down and relaxing the tension of the integument, we can almost always bring the flaps in satisfactory apposition. Where the tension is great, we should distribute this as evenly as possible by using a large number of sutures, beginning at each extremity of the wound and approach the centre. When it is found impossible to close the wound in this manner, the edges of the wound should be brought as near as possible together and stitched to the pectoralis minor muscle, and the raw surface covered by autoplasty or skin graft, or left to heal by granulation process. There are many minor points incident to the operation which I need not detail, as they will be dictated to us by the general rules of modern surgery and a little common sense, such as the ligation of arteries, providing proper drainage, the necessary dressings, which should include two large compresses, one above and one below the wound, evenly applied to all that surface of skin which was raised in the course of dissection, fixation of the arm and shoulder; and finally, we should keep our patient as much propped up as possible, and turned on the sound side, thus facilitating drainage from the axillary end of the wound. With our advanced knowledge of the anatomo-pathological character of the organ and disease in question, there is no reason why the operation should not result in a cure.

In my last two cases, I supplemented the operation by the administration of arsenic in increasing doses to its physiological effect, and continued it in the maximum quantity for three or four months, with what I believe to be beneficial results. You will be surprised at the quantity of arsenic some of these patients can tolerate. One of my patients took two grains of arsenious acid divided into three doses, every twenty four hours without inconvenience.

With regard to my cases—thirteen in number—nine were operated upon by the old method; all died promptly from recurrences and metastasis within two years; five died within twelve months, one in thirteen, two in fifteen, and one in seventeen months.

My last four were operated upon as described in this paper; one six and one four and a half years ago; the two remaining are too recent to report results. The one operated upon six years ago is still living with no recurrence, and the other, operated upon four and a half years ago, died last summer from a disease which had no relation to cancer—*i. e.*, la grippe.

My colleague, Dr J. C. Cawood, (Knoxville, Tenn.,) operated upon Mrs S., age 48, for cancer of the breast in 1889. The operation which he performed was in many respects similar to the one I have just described. The patient is living at this time, and has had no recurrence.

POST-OPERATIVE INTESTINAL PARESIS FROM NERVE INJURY *

By EDWARD McGUIRE, M. D., Richmond, Va.,
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In a series of seventy-five abdominal sections done for hysterectomy, suppurating and gangrenous appendicitis, pus tubes, ovariotomy, intestinal obstruction, ventral fixation, etc., I have had four deaths. One died from acute general sepsis, incident to and present at the time of operation for gangrenous appendicitis. One from injury of the ureter and peritonitis after a hysterectomy. Two died from intestinal obstruction—one from volvulus and one intestinal paresis from nerve injury. It is to this latter form of intestinal obstruction that I wish to call attention, and I know of no better way than to report several cases briefly that have come under my care.

Case I—Fannie B, colored, age 34. Diagnosis, fibroid tumor. On opening abdomen, found an intra ligamentous fibroid of the right side, which reached to the umbilicus. There were evidences of pre-existing attacks of peritonitis and many adhesions. Broad ligament incised; tumor enucleated; uterus not removed. There was considerable hæmorrhage from the sac. A large number of bleeding points were ligated; the edges of the sac stitched together, except a small opening, into which a large quantity of gauze was introduced to stop hæmorrhage and for drainage. The operation lasted nearly an hour, the time being mostly consumed in stopping hæmorrhage from the sac. The patient reacted well and did well up to forty-eight hours after the operation. Gauze removed. No nausea after the effects of the chloroform had passed off. Temperature not exceeding 100°, pulse 90, abdomen flat. Forty-eight hours after the operation, slight abdominal distension began to appear; no pain or nausea. Calomel, one grain every hour until six grains were given. High enemata of salts,

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turpentine and glycerin repeatedly given with no effect. Salines by mouth. Abdominal distension rapidly increased; pulse more rapid; nausea; facial expression bad. I determined to re open the abdomen, but told the nurse to try one more enema while preparations were being made for the operation. In a short time, the nurse reported that the patient had had a large action and passed a good deal of gas. I found the woman's whole expression changed, and she made a rapid recovery.

Case II—Mrs. S., age 20 Diagnosis, pus tubes. Operation. Found small ovarian cyst, pus tubes, with, I think, the worst adhesions I have ever seen. After removing the cyst and tubes, I looked into the pelvis, and it appeared as if the whole pelvis had been stripped of peritoneum. Gauze packing for drainage and to stop hæmorrhage was used. Reacted well. Progressed satisfactorily until thirty-six hours after the operation, when the abdomen began to swell. Enemata were used with no effect. Gauze removed. Calomel and salines by mouth. Pulse became more rapid; temperature 100°; facial expression marked and bad. The abdominal distension increased rapidly, with nausea, and when on the eve of re opening the abdomen, after using every method to move the bowels, I at last succeeded. In an hour the woman's whole condition was changed, and she made an uneventful recovery.

Case III.—Mrs. Jane C., age 33. Hysterectomy for a fibroid that reached above the umbilicus; adhesions not bad. Patient progressed favorably until sixty hours, when slight swelling of the abdomen showed. None of the remedies given had any effect. Patient transfused and abdomen re opened. No peritonitis; intestines enormously distended; no obstruction apparent. Intestines opened and emptied of gas and contents. Wound closed. Patient died next day. No evacuation secured.

The death of the second hysterectomy in this series of cases was due to mechanical obstruction, caused by a twist of the bowel a short distance above the ileo-cæcal valve This was recognized early; abdomen re opened; in a few minutes the obstruction was relieved, but the patient never reacted from operation.

Ileus is classified etiologically into adynamic, dynamic and mechanic. *Adynamic*, as its name implies, is that type of ileus in which we have an arrest of intestinal peristalsis. It is further divided etiologically into ileus caused by operations on the mesentery, by prolonged strangulation, by spinal injuries, by strangulation of the omentum, by hepatic and renal colic, by compression of an ovary, by local and general peritonitis, by embolism and thrombo-phlebitis, and last, but by no means least in importance and frequency, by afferent nerve trauma.

Post-operative intestinal obstruction from mechanical and septic causes has been frequently and fully brought before the profession. While the importance of post operative ileus from nerve injury has not received the attention that it should, one reason is that it is generally confounded with some other variety, especially the septic form, which is often added to the former in a few hours if not relieved. The nervous distribution of the intestinal canal is derived from the solar plexus. The impressibility and sensitiveness of this part of the nervous system is not excelled in any part of the body, and it is little to be wondered that overstimulation from injury is followed by a paresis of the muscular coat of the intestine to which the afferent or motor nerve is distributed.

We have an illustration of the wonderful inhibitory power of the nervous system over intestinal peristalsis in the inhibition incident to the passage of a gall stone or renal calculus. Again, we note it in omentum strangulation, in ovarian compression, from blows on the abdomen, etc. I believe that a large number of cases where death is attributed to post operative sepsis or peritonitis are either caused by or have their beginning from reflex nerve injury.

A bowel that has been exposed to the air for a long time until it has become blanched and dry, one that has been subjected to rough manipulation or has had its mesentery or coats torn or lacerated in separating adhesions, has sustained sufficient injury to lose, by reflex paresis, its functionary powers both of absorption and peristalsis. The intestinal canal is nature's sewer and great drainage tube of the peritoneal cavity after abdominal section. Arrest its functions and see what occurs. Pathogenic bacteria in the canal multiply rapidly, digestion is interfered with, gases form quickly, the coats of the intestine are distended and thinned, so that micro-organisms find easy access through the thin walls into the peritoneal cavity, and paresis from septic peritonitis is often quickly added and is rapidly fatal.

That these cases in all instances are septic from the beginning, if done under aseptic conditions, I do not believe. How many of us have seen cases of intestinal obstruction when we have been on the eve of re-opening the abdomen, and in a half hour after purgation have our patients convalescing and recover without any other bad symptom. These are cases of reflex paresis from nerve injury, and are not primarily septic, as usually thought,

though, if not relieved, may become so. Distention of the intestines from reflex paresis may come rapidly or slowly. I believe, to a great extent, it depends upon the preparatory treatment of the intestinal canal prior to the operation. An intestinal canal that has been thoroughly emptied by purgation, and has only been allowed animal broths for thirty-six hours prior to the operation, and has been subjected to the action of intestinal antiseptics, is not so liable or so early followed by distension and increasing obstruction. By this careful preparation, I am confident that time is given the nerve and nerve centres to regain their proper function before distension from gases has occurred and the increased inhibitory action incident to the gaseous distension. On the other hand, as a consequence of improper preparation, I recently saw a case whose intestines were completely collapsed when the patient went on the table, and yet, during a prolonged operation for bad adhesions, the intestines became markedly distended. This could only have been due to the injury and the manipulation of the bowels.

An exceedingly interesting, important, and, at times, difficult matter is the differential diagnosis between the various forms of post-operative ileus. This is true to such an extent that we have numerous recorded instances in which the abdomen has been opened to treat a mechanical or septic ileus, when no such condition was found to exist. In every instance, the problem to solve is, whether we have to contend with a case of traumatic, septic, or mechanic ileus.

Vomiting in post-operative traumatic ileus, if the effects of the anesthetic have passed off, does not occur as early as in the septic or mechanical variety, and in most instances is not excessive until the advent of sepsis. Vomiting continuing over the third or fourth day, or beginning forty-eight hours after the operation and continuing, means something more and is of grave importance. At first it is not frequent, and also does not assume the gulping characteristic of acute sepsis. In the mechanical variety also, vomiting is not an early symptom when the obstruction is low down in the intestinal tract.

Pain is not severe, nor has it the colicky character as in the beginning of the various forms of mechanical obstruction. I have seen women, with this form of paresis, suffering hardly any pain, except the discomfort due to distention.

Nor is there movement of the intestines as determined by auscultation. This is also true of septic paresis, however induced. It should be remembered that in intestinal paresis, with circulatory interference in the intestinal walls, there is sometimes free exudate into the lumen of the bowel, and the splashing sound with each respiration, due to this fluid, may be mistaken for peristalsis. We have only to note that the former is uniform, while the latter is variable.

The distension of the abdomen is gradual and diffused over the whole surface, and not limited at first to a portion of the abdomen, as is often seen in mechanical ileus in its early stages.

I recently observed, after a hysterectomy for a large fibroid, a case of mechanical obstruction from volvulus, in which coils of distended intestine were clearly perceptible through the abdominal walls, and thus, by inspection almost alone, was enabled to diagnose the type of obstruction.

After extensive distension has occurred and septic paresis or peritonitis is added, which condition is usually, but not always, accompanied with a rise of temperature, there is no line of demarkation between these two forms. One gradually merges into the other, and the case rapidly progresses from bad to worse temperature.

The pulse should be watched closely, as it often gives the first indication of impending complications by gradually increasing in frequency. The pulse rapidly increases in frequency after distension occurs and septic conditions are added. I have often begun purging the patient by relying on the pulse alone, though discrimination should be made in neurotic or hysterical cases for the purpose of prognosis.

A short time ago, after an ovariotomy, I had the pulse to go to 140 beats to the minute, and remain so for twelve hours, though other neurotic symptoms were not marked. I relied in this case on the facial expression and the absence of abdominal symptoms. As a fact, there should really be very slight appreciable change in the frequency and volume of the pulse prior to distension or advent of sepsis.

The facial expression is another strong symptom of impending trouble I have seen it change in an hour, even before the depression incident to abdominal distension or sepsis had occurred. After this, the pinched expression, sunken eyes, around which are dark circles, all betoken the increasing serious malady.

Preparatory treatment.—The preparatory treatment in the prevention of ileus from nerve trauma, *per se*, is not of much value, except in

toning up the nervous system with strychnia prior to the operation; but the prevention of the abdominal distension, increasing the obstruction and incident to paresis, until the nervous tone of the bowel is restored is of vast importance. I have seen the abdomen remain flat for days after a section, although no action of the bowels could be obtained, where proper care to the intestinal canal has been followed. The bowel should be thoroughly emptied and kept so for several days before the operation. Some intestinal antiseptic that will prevent fermentation should be given three or four days before the operation. The avoidance of milk especially, or starchy food, for thirty-six hours prior to the operation is the method I usually employ. I am sure I have seen some cases do badly because of a milk diet prior and subsequent to the operation. I know of no food which generates more gas than does milk.

Rapid operations, the avoidance of exposure and rough handling of the intestines, the repairing of all peritoneal injuries as far as possible, the *prevention of traction* on the intestinal walls, are all important in lessening the danger of a paretic bowel due to nerve injury. It is my practice to give no food by the mouth until the bowels are moved. Sufficient nourishment can be and should be secured by enemata of animal broths and stimulants. The rectum should be irrigated once or twice a day. This is important, or else decomposition of the residual food given by enema will occur; ptomain production and absorption will complicate the case. Apart from this, the nutrient enema will not be absorbed unless the rectum is kept in a healthy condition by irrigation. Saline or boracic acid solution is useful for this purpose.

Hypodermic injections of strychnia are useful, not only in preventing shock, but also in restoring tone to the paretic bowel. Opium is contraindicated because of its inhibiting effect on peristalsis, but the exception to this is in cases of great restlessness, jactitation, or in opium habitues; even here a commanding dose of bromidia by enema will often suffice. The best form of opium to administer is the phosphate of codeia hypodermically. When distension occurs incident to the paretic bowels, our only reliance is to excite peristalsis and secure an evacuation. The effects of this on the patient's condition is marvelous. Purgatives administered by the mouth in the mechanical form are contraindicated; in the paretic form this does not apply. No effort should be spared in the paretic form to secure the discharge of the enormous amount of gas and intestinal fluids.

My routine practice is to begin on the second day, or as soon as any untoward symptoms appear, the administration of broken doses of calomel, followed by high enemata of salts, glycerin, turpentine, or peppermint. If this fails, magnesia sulphate by mouth is administered, and this is augmented by the continual administration of high enemata. In simple cases, large enemata of peppermint water will not infrequently secure the discharge of a great quantity of gas, with intense relief to the patient, which usually culminates in refreshing sleep. There is no single effect of a drug in the whole surgical practice more strikingly beneficent than a purgative in paretic ileus.

Should all efforts fail, and septic paresis or peritonitis be added, as a last resort we have to consider the propriety of re-opening the abdomen and washing out or sponging out the abdominal cavity, and, as Mr. Treves advises, of incising the intestines and emptying it of its poisonous fluid and gaseous contents. Subcutaneous or intra-venous injections of a saline solution are useful at this stage I have seen cases of fibrino-plastic peritonitis get well after irrigation and drainage of the peritoneal cavity, but I have seen no case of general septic peritonitis get well even after incision and irrigation of the paretic bowels.

The question may be asked, if all these symptoms do not pertain alike to post-operative sepsis and peritonitis, and is not the condition septic from the beginning? This is just the point I wish to refute—that all of these cases are septic necessarily, as is generally accepted by the profession. Much has been written on the treatment of peritonitis by purgatives. It is not so much the peritonitis as the paretic ileus which is cured by purgatives. Cure the paretic ileus and you will prevent the septic peritonitis. I do not believe a case of septic peritonitis was ever cured by purgatives alone, and I believe that a paretic ileus from nerve injury alone may be sufficient to produce death by systemic intoxication from the absorption of the decomposed intestinal contents and the distension incident to the paresis.

Discussion.

Dr. Hugh M. Taylor, Richmond, Va., thought the paper by Dr. Edward McGuire one of special interest to abdominal surgeons, as post-operative ileus was a cause of many post-operative fatalities. Sir Spencer Wells lost eleven of his first series of one thousand ovariotomies from ileus. In a series of one hundred and thirty-two cœliotomies in Sangers' Clinic fifty per cent of the deaths were due to ileus.

Post-operative ileus is classed as mechanic and adynamic. The mechanic type is the one which has in the past received the greatest amount of professional thought. Many cases credited in the past to mechanic ileus should have been, he thought, placed under the adynamic head. While it was important to remember that adynamic ileus could arise from a number of causes, such as operations on the mesentery, prolonged strangulation, spinal injury, strangulation of the mesentery, hepatic and renal colic, and ovarian compression, and local and general peritonitis, thrombo phlebitis, embolism, etc., he would impress his belief that by far the most frequent cause of post operative adynamic ileus was nerve trauma, or afferent nerve lesion. In doing intra-abdominal work, he thought we should recall how little trauma is necessary to thrombose the delicate veins in the mesentery. How little injury is needed to induce an arteritis obliterans, with consequent vascular disturbance in the intestinal walls; and last, but by no means least in importance, how little trauma may induce a neuritis and motor and sensory disturbance in the nerve supply to the bowels. A due appreciation of such pathological possibilities explains the frequent occurrence of post operative ileus from nerve trauma.

The paper, he thought, was of special value, in that it essays to differentiate post operative mechanic ileus from adynamic, and also to diagnose that type of adynamic ileus due to nerve trauma from adynamic ileus due to sepsis or other cause. The key to the successful treatment of any type of post-operative ileus centres in our ability to ascertain the cause of the ileus in its incipiency. In any case of post-operative ileus, if treatment is delayed until the advent of septic peritonitis, the natural tendency in all cases, remedial efforts are rarely successful. In post-operative mechanic ileus, an operation to relieve the mechanical obstruction is urgently called for; while in adynamic ileus with intestinal paresis from nerve injury, our only resource is purgation prior to the advent of septic peritonitis. He agreed with the author of the paper in thinking many cases of post operative septic peritonitis were not primarily sepsis, but were in the beginning cases of intestinal paresis from nerve injury, and which went on, in spite of or for the want of proper treatment, to the development of septic peritonitis.

In his opinion, the paper would accomplish much good, as it outlined the differentiation between the types of post-operative ileus, and in doing so indicated the logical line of treatment for each.

CRUDE NOTES OF SOME ABDOMINAL SURGERY.*

By WILLIAM L. ROBINSON, M. D., Danville, Va.

Honorary Fellow and Ex-President Medical Society of Virginia, etc.

I present a brief history of a few cases of interest from my abdominal work. I have not selected simply the good results, but have added my misfortunes, trusting that a fair criticism will be helpful to some others as well as myself.

I will first report two cases of *pelvic abscess* referred to me last September.

Case I.—White female, age 28, who had been suffering with recurrent abscesses, discharging through the rectum and uterus for five months. Septic chills and diarrhœa had produced a physical wreck.

Case II.—Colored female, 38 years old, more septic than the first, had been confined to bed for the summer months, too feeble to be raised up. Her nervous system was frightful, and she was almost crazy from irritation of the bladder, as the abscess discharged constantly through the bladder and rectum. I opened up freely behind the cervix, irrigated and drained. In the latter case a tube in rectum and bladder would flow freely if irrigated per vaginam.

Both cases were out in four weeks, and active at business, and subsequently gained twenty to twenty-five pounds. The operations were insignificant, but the results were perfect.

Case III.—A most interesting case was a woman, 45 years of age, who had a tumor, seemingly anchored between the lower border of the liver and the crest of the ileum. For two years she had had frequent attacks of incessant vomiting, lasting two or three weeks, robbing her of sleep and nourishment. I cut down over the tumor and found, what I diagnosed, *a floating kidney with adhesions*, and attached to the appendix vermiformis. I removed the appendix and stitched the kidney in place. Prompt recovery resulted. Four years have elapsed and there has been no recurrence of trouble.

My last *ten cases of appendicitis* attests the oft-repeated reports that no two cases are alike, and that symptomatology is a most deceptive guide as to the pathological condition existing. Five were acute cases with abscesses—one burrowed in the groin, which only needed a free opening, curettage, irrigation, and drainage. Two were acute cases, with high fever, anxious expression, nausea and septic conditions. Both

* Read before the Twenty-eighth Annual Session of the Medical Society of Virginia, held at Hot Springs, Va., August 31, September 1 and 2, 1897.

were tympanitic over the McBurney point. One case showed dullness under percussion posteriorly; the other in the iliac fossa. Free incision and drainage enabled both patients to be out at work promptly in four weeks.

My fourth case of this group was a child 4½ years old, who had been a most healthy specimen all his life. Sick on Thursday in April. I was called next day; suspected appendicitis, and so purged, etc. But the child grew rapidly worse, and on Monday became comatose, and continued so until Wednesday night, when I was wired to operate. I found him too distended to elicit any information from physical examination. I operated promptly by lamp light, and found three ounces of pus The appendix was gone, and the condition was such as to require my stopping further operative investigation. His temperature was 105°, pulse 165, at the time of operation, and did not arouse when anæsthetic was given. His temperature, pulse and tympany all subsided by morning to a favorable condition; but a recurrence of fever in the evening called me again, and I found by probing a second pus pocket, which I opened with exit of three more ounces of pus. Close search revealed no more pockets. From that time until Sunday he rapidly improved—pulse 120, temperature 99 2-5°. All tympany was gone, and during Sunday was bright and talkative. With the exception of a very slight rise of temperature Sunday night his condition was unchanged, and the nurse's record showed at 4 A. M., Monday that pulse, respiration, and all were favorable. Yet in half an hour afterwards, while turning over, he suddenly expired. My diagnosis was thrombus as a cause of death. I would like an expression of opinion from the members on this subject, as it was the only one of the ten cases I lost. Does not the desperate condition, when operated on, and the improvement following, encourage us never to say, "too late to try" to save a human life?

May 4th, the same physician was called to see a gentleman, who had always enjoyed perfect health, suffering with intense pain in the bladder. Suspecting calculus, he gave morphine The next day a general soreness existed over the abdomen, but the alert doctor found the appendicitis existing. The patient was in doors only three days, but, after being out ten days, he had a slight pain recurring, and he was referred to me.

Physical examination revealed adhesions but little tenderness. I advised operation, and prepared him by salines and ice-bag for a week, and expected easy sailing. I found the adhesions unusually strong and the appendix large, black and necrotic, breaking in two while carefully bringing it up in the incision. For two inches around the same black, necrotic condition of the tissues existed. I ligated, not tightly, close to the cæcum, touched with thermo-cautery, trimmed and curetted the necrotic area, and covered the pathological site. Recovery prompt with rise of fever, and he was at home inside of four weeks.

Bear with the recital of one more case.

A young man, 26 years of age, perfect athlete, had what was diagnosed obstruction of the bowel thirteen months previous to my seeing him. He was in bed three weeks with fever, but has been actively engaged since. I was called to see him, and found him with pain in the abdomen. I found this to be a case of appendicitis. A saline purgative so improved him that he was out before I called the following day; but in two days he came for relief from the annoying uneasiness. I advised preparation and operation, to which he acceded Operation revealed extensive adhesions; the appendix was gone, except a thin wall abscess, the size of a hickorynut, semi-solid, where it joins the cæcum. An elliptic removal of a part of the bowel and then a dissection of three enteroliths on the free margin of the small bowel, each the size of large black-eyed pea. They were as hard as stone, and covered by plastic exudate. The appendix had evidently sloughed off during the so called attack of obstruction of the bowels.

It is worth while to note the amount of physical exercise taken by this patient without bursting this thin-walled abscess, how insignificant the outward manifestations, and how well nature had walled off the enteroliths and saved the parts from septic infection. Recovery was prompt, and health perfect since.

A group of hysterectomies.—One was for a fibroid of the uterus. Woman 50 years of age; tall and good condition. The fibroid existed for years, with steady growth. She was opened from the ensiform cartilage to the pubis. Weight of tumor, forty pounds. Extra peritoneal treatment of stump. Uneventful recovery.

Two myomata, weighing fifteen and eighteen pounds each, with dilated vessels of omentum, covering them like a network of chicken intestines; treated as above. A twist in the bowel was recognized in one case on the second day. The abdomen was promptly opened. Both recovered, and were out in four weeks.

A fourth case, a *fibroid of uterus*, fifteen pounds, had to be almost dissected out; stump

dropped. Ligature worked out through the bladder seven weeks after. Recovery good.

My last case was cancer of the cervix uteri. The cervix gone, the circular artery eaten into, and hæmorrhage had almost taken life before I saw her. Free curettage and cauterizing controlled it. I built her up for two weeks, and again on the morning of operation used the thermo-cautery on diseased surface and on uterus; then separated the vagina from the uterus with the same; opened suprapubically and readily removed the organ. No shock or vomiting followed. In thirty-six hours she began to spit up water, etc. I drained through vagina. Calomel triturates were given hourly, as also high rectal enemata; pulse was quick, but good; temperature rarely exceeded 99 2 5°, and never went over 100 4 5°, and then for a brief period. Expression was good; nervous tone excellent; no unusual distention of gas. On the morning of third day she passed volumes of gas, as expressed by nurse's record. Her continued spitting up and gradual giving way and no movement, induced me to open the lower angle of the incision and flush from above through the opening in the vagina with salt water, hoping to float the bowels and untwist any obstruction existing.

Short relief came; but failing of reliable results, I opened freely without anæsthesia, washed bowels, found the band of adhesion causing the bowel to twist on itself and rapidly replaced. Water in full stream was pouring all the time I was performing. She sank in twelve hours. Verdict, too slow in re opening.

But, listen, gentlemen. The lack of temperature guide, placid expression, absence of fœcal vomiting, moderate distention, and passage of gas, encouraged me to hope it would be unnecessary.

It is easy to lay down rules; easier still to see what should have been done; but, honestly, how many of you would have acted differently and more promptly under the circumstances?

In May last, I was called to the country to see a woman 64 years old, who had been gored by an infuriated cow in the left groin. Intestines had been out four hours, covered with manure and dirt. I had my nurse boil water and get things as aseptic as practicable. Assisted by Drs. Anderson and James, I washed thoroughly, opened up the lacerated wound nine inches, trimmed the ragged edges, and built up with twenty-two buried stitches of silk worm gut, as in radical operation for hernia. Closed wound without drainage. Recovery without fever, and only two superficial stitch abscesses, which healed in ten days.

Near the same week was wired to see case of *strangulated omental hernia*, fifteen miles in the country, and only twenty minutes to catch train. The patient had suffered twenty years with the adhesive form, but been strangulated twenty hours. When I saw him, the sac was filled with offensive bloody serum, and the omentum was black and friable. I dissected out, drew the omentum down to a healthy posture, curetted, and did radical operation for hernia. Only had a doctor who had never given chloroform to assist me, and ever and anon, in quiet terms, he would say, "I don't think he is breathing." Notwithstanding the difficulties, I prepared everything as aseptic as possible, with the result of rapid uninterrupted recovery. This teaches the value of clean work.

Analyses, Selections, etc.

Surgical Treatment of Fibroid Tumors of the Uterus.

Dr. Augustin H. Goelet, of New York, in a paper read by invitation before the Mississippi Valley Medical Association, at Louisville, October 5–7, 1897, enumerates as the surgical treatment of this class of pelvic tumors, *curettage, division of the uterine arteries, myomectomy* and *hysterectomy*. The conservative trend of the author's views is apparent. He thinks the use of electricity, in these conditions at least, should be limited to inoperable cases where the constitutional condition or cardiac diseases prohibits, or where the patient refuses to consent to operation. He believes the prejudice against operation is being rapidly removed, because the feasibility of conservative procedures has been demonstrated, and because the mortality of hysterectomy has been so greatly reduced. Attention is directed to the fact that an extensive myomectomy upon an uterus the seat of numerous fibroids is a successful possibility now, whereas only a few years back the uterus would have been sacrificed in such cases.

Curettage is designated a palliative measure against hæmorrhage and endometritis, but it should constitute an auxiliary to all operations of a less radical nature than hysterectomy.

For permanent obliteration of the uterine arteries, complete or almost complete atrophy of the tumor is claimed, when it is appropriately limited and positive destruction of the continuity of the vessels is secured. Division as well as ligature of the vessels is insisted upon as essential to secure permanent arrest of the circulation. Simple ligature cannot be de-

pended upon because some broad ligament tissue is always included, and when the included tissue shrinks in consequence of the compression, the ligature loosens, and the circulation in the vessels is frequently restored.

This operation should be limited to small interstitial growths and small sub peritoneal tumors, which spring from the uterine wall below the fundus. Those growing from the fundus, or near the fundus, are nourished chiefly by the ovarian, and not the uterine arteries.

The removal of very large tumors of the submucous variety, which fill the uterine cavity, through the abdomen by incising the uterine wall, and saving the uterus, is regarded as preferable and more certain work than attempting to empty the uterus through the vagina.

The author does not think vaginal hysterectomy for uterine fibroids is a necessary or justifiable operation, since tumors which are sufficiently small to permit removal in this manner either need not be interfered with; or if they are causing symptoms, atrophy may be secured by dividing the uterine arteries, or an abdominal myomectomy will save the uterus.

Abdominal hysterectomy should be reserved, he thinks, for cases where these other operations are not feasible, and especially where the size of the tumor makes it a source of great inconvenience, and where degenerative changes have taken place.

Book Notices.

System of Medicine By *Many Writers*. Edited by THOMAS CLIFFORD ALLBUTT, M. A., M. D., LL. D., F. R. C. P., Regius Professor of Physic in University of Cambridge, etc. Vol. III. New York: The Macmillan Co., London: Macmillan & Co., Ltd. 1897. Large 8vo. Pp. 1176. Cloth, $5.00.

We have never received Vol. I for notice; hence, have not had an opportunity to speak of its contents. Vol. II received attention in the issue of June 11. Vol. III, now before us, deals with "infective diseases of chronic course" (tuberculosis, leprosy, actinomycosis and Madura foot). Of diseases of uncertain bacteriology, measles, rubella, scarlet fever, chicken-pox, small-pox, mumps, whooping cough and constitutional syphilis are classed as "not endemic;" while typhus fever, dengue, yellow fever, dysentery, etc., are classed as "topical or endemic"—although in the *Addenda*, note is made of the discovery of the microbe of yellow fever by Sanarelli. Glanders and anthrax are named as the infective diseases of certain bacteriology, communicable from animals to man; while vaccinia, foot and mouth disease, rabies and glandular fever have an uncertain bacteriology. Malarial fever, hæmoglobinuric fever and amœbic dysentery are named as diseases due to protozoa. Dr. Wm. Osler—the only American author in this volume—contributes the article of 20 pages on malarial fever. Pages 787–1144 inclusive, are given to "intoxications" and to "internal parasites." While many of the diseases described are chiefly of importance to those who practice in foreign countries, it would yet be difficult to turn to a page that is not full of interest. The section by Dr. Caiger on the "co-existence of infectious diseases" combats a popular professional idea with facts and figures that make his conclusions positive—that two or more infectious diseases may co-exist in the same patient; and that there is no evidence that the incubation stage of either disease is interfered with in any particular. In the section on treatment of tuberculosis, we are afraid that Dr. Sidney Martin's statement that "Nothing has yet been discovered to counteract the invasion of the tissues by the bacillus tuberculosis" may be too discouraging to therapeutists. We are becoming more and more satisfied that though some such agents as anti-tubercle serum, creosote, etc., invasion of the tissues by the bacillus tuberculosis may often be measurably counteracted. Certainly the advances in treatment during the past few years indicate that we are near the threshold of discovery of a cure for early tuberculosis. With reference to the treatment of malarial fevers, Dr. Osler unquestionably goes too far in his assertion, that "the physician who at this day cannot treat malarial fevers successfully with quinine, should abandon the practice of medicine." Practitioners in strongly malarial sections here and there meet with cases where other agents seem demanded—perhaps because of personal idiosyncrasy. The volume, however, as it is, is a most valuable contribution to each of the subjects named in its pages.

Editorial.

Correction in Medical Examining Board Report.

By an oversight, the name of Dr. John W. Dillard, Lynchburg, Va., does not appear as Examiner on Medical Jurisprudence in the Report in our last issue of the Fall Session of Medical Examining Board of Virginia. Subscribers who file their numbers of the *Semi-Monthly* will please see that the address is properly inserted on page 395.

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Original Communications.

LACK OF INTEREST IN PLASTIC SURGERY.

By JOSEPH PRICE, M. D., Philadelphia, Pa.,

Honorary Fellow of Medical Society of Virginia, etc.

It is to be regretted that there is not a stronger interest in plastic surgery. If the profession would take the same interest, devote the equivalent in time, manifest the same enthusiasm in the practical study of plastic surgery they do to intra-peritoneal disturbances, the result would be the relief of many sufferers, the saving of many mothers from permanent invalidism. No man can be a good abdominal and pelvic surgeon without a thorough knowledge of obstetrical science, and without a bedside experience in the practice of its art; and few men give that study to practical obstetrics which enables them to do good plastic surgery.

It is important, in fact absolutely essential, to be thoroughly familiar with the female pelvis, and maternal soft parts, before, during and after child-birth. There must be a careful study of the female perineum to enable the surgeon to restore to normal relations structures injured in child-birth. Throughout labor it is important to study the normal perineum immediately after labor, by inspection and by digital examination, to determine the precise nature and extent of injuries, if any, resulting from the delivery. It is then you can determine all injuries of pelvic fascia and muscle, even those of the levator ani. You can also become informed of certain deep mutilations, due to the premature application and use.

The injudicious and indiscriminate use of obstetrical forceps has for a long time been responsible for distressing and not easily repaired injuries of the pelvic floor. Those familiar with practical obstetrics rarely use obstetrical forceps—only in about two to four per cent., even in consulting work. As the obstetrician's experience broadens, as his work increases, his use for forceps diminishes; so does his infantile mortality. The schools are largely responsible for the too frequent use and abuse of forceps. The real character and extent of uncomfortable conditions, sequelæ of injuries to the pelvic floor, uterine decensus, posterior displacements, cysts, and rectocele are scarcely recognized by many engaged in obstetrical practice.

The patient may call attention to weight and pressure, to the sensation of something protruding or of everything coming from her—to vesical and rectal discomfort—only to be comforted by the reply, that she has malaria or grippe. She may tell him that she has "vaginal respiration," gas coming from the vagina when she rises in the morning, that when constipated she has the sensation early in stool of everything coming through the vagina—the sphincter resistance being so much stronger and greater than that of the recto-vaginal septum, resulting from loss of the transverse perineal muscles and fascia; the gaping vagina and protruding rectocele, increased by straining, hæmorrhoids are favored by loss of support of those vessels, the absence of all resistance to finger when placed in either sulcus—are all conditions easily recognized by even careless observers—the loss of co-ordination after deep injuries of the female peritoneum and lack of study and investigation.

Primarily, I have but little patience with a certain large class of so-called operators, who think they can do a perfect operation if they possess a pair of scissors and needle and a noisy needle-holder. I rejoice that all wrangling has ceased over one, two or three stich methods of operation, so commonly practiced a few years ago. The study of all the injuries should be prosecuted in a large dispensary service, where the injuries are studied carefully, repaired carefully, and watched after the operations. A good number of such patients return to the dispensary for a physician to attend them in their approaching confinement. Here, again, he has an opportunity to study the repaired perineum, its tolerance to a perfect test of operations practiced; also the nature of recurring tears.

THE LITHEMIC TENDENCY.*

By FRED. R. CARLTON, M. D., Indianapolis, Ind.

Some one has it, that "Speculation is mother to investigation." In view of this truth, it is not to be frowned down, and though it may become a cumbrance and drag to real progress, it more often is the stimulus which sets the restless intelligence to groping its way out of darkness and misunderstanding into the clearer light of knowledge. This is, in large part, the history of our advance in the studies of metabolism, and we are not out of the shadow yet. Many have been the theories advanced as to the various manifestations of the uric acid diathesis, but until recently little had been established, so that the proposed solutions grew great in number, and blind assertion waxed strong in the absence of any tangible proof.

To-day few fields, if any, offer so much inducement to original research as those of the nutritional disorders. Metabolism, so much talked of, and so little understood, is just swinging open its portals to the physiological chemist, and soon we may expect to see and know many things now hidden. Why a common food supply will in the one instance be converted into nerve cell and function; in another, muscle fibre; in others, organs of special sense we may never appreciate. This seems the secret which guards the knowledge of the source of life. However, many conditions, hitherto shrouded in mystery, are now being explained, and the gouty or lithæmic tendency not the least of these. Sydenham is often quoted as saying, "Gout is lord of disease and the disease of lords." He failed to recognize our American forms, where often the pauper is victim and the daily drudge a sufferer, as well as the titled nobility and landed gentry of England. Fothergill seemed to grasp the subject, and wrote in a masterly way on the protean forms of gout. He recognized and described those irregular forms which seem to have with us superseded classic podagra. Murchison took up the almost abandoned subject, emphasizing the importance of what to many were misunderstood and unknown conditions. This study of his first gave us the name lithæmia. From this time the interest manifested in this line of research has been steadily on the increase. Physiology for many years has, in a way, been dogmatic, and has dealt only with ideal conditions of living, as, that a man must have so much of carbohydrate, so much of fat or proteid or salt in order to maintain life. Since this cannot be attained, we must deal with the practical every-day life of rich and poor alike. As Stewart puts it, "Economic and social influences, prices and habits, and not purely physiological rules, fix the diet of populations. The nomads of the Asian steppes, and the herdsmen of the Pampas are said to subsist for long periods on flesh alone. The Chinese laborer lives, for example, on a diet no physiologist would commend. The Irish is an even worse case. The best fed laboring populations of Europe still live largely on wheaten bread; while one hundred years ago the Scotch peasant still cultivated the soil, as the Scotch reviewer, the Muses, on a little oatmeal."

How best, then, to deal with a modern civilization in all its varied aspects is as much the province of the clinical physiologist as is the theoretical. That condition growing out of this artificial life, and termed lithæmia, has been defined as one "due to a retention and accumulation in blood of imperfectly oxidized products of excretion of which uric acid is the type." Murchison theorized that the fault lay in a functional disturbance of the liver. Haig treated of defective elimination and its causes. Levison investigated the nucleins and abnormal leucocytosis. Garrod heaped all the blame on an offending kidney, and in this view is recently supported by Luff, of the Royal College of Physicians and Surgeons, London, who, in concluding the course of the Gulstonian lectures, laid down several conclusions as follows:

(1.) "Uric acid is not normally present in the blood of man and other animals, nor in the blood of birds.

(2.) This acid is normally produced in the kidney.

(3.) It is normally formed from urea, probably by conjunction of that substance with glycocin in the kidneys."

His (6) conclusion was, gout "is probably always preceded by some affection of the kidneys, functional or organic, which interferes with the proper execretion of uric acid. The probable seat of the kidney affection is in the epithelium of the convoluted tubules."

Rachford's researches were in line of the allied groups. His work on "Xanthine, Hetero- and Para-Xanthine" has been a credit to himself and an honor to the profession of the Mississippi Valley. Osler, with characteristic candor, says: "Murchison introduced the term lithæmia to designate certain symptoms due, as he supposed, to functional disturbance of the liver. Not only have his views been widely adopted, but, as is so often the case when we give the

* Read before the Mississippi Valley Medical Association, Louisville, Ky., October 5-8, 1897.

rein to theoretical conceptions of disease, the so-called manifestations of this state have so multiplied that some authors attribute to this cause a considerable proportion of the ailments affecting the various systems of the body. Thus one writer enumerates not fewer than thirty-nine separate morbid conditions associated with lithæmia. From what has been said as to our knowledge, or rather lack of knowledge, of the mode of formation and elimination of uric acid, it is very evident that the physiology of the subject must be widely extended before we are in a position to draw safe conclusions. Deficient oxidation is probably the most essential factor in the process, with the result of the formation of less readily soluble and less readily eliminated products of retrograde metamorphosis."

Lithæmia is first cousin to gout, from which it differs, only, in that the salts are diffused; appreciable deposits do not commonly take place, whereas in gout distinct deposits occur in the joints. Dr. Pepper speaks of having run across old English records where deposition as tophi had taken place to such extent that ulceration followed in the overlying skin with projection of the stone, so that in several instances these old gouty subjects would chalk up their drink account on the tavern shutter with the chalk stones of their own knuckles. However, we may say, and certainly be not far in error, that the etiology of lithæmia has to do with vicious habits, general irregularities, hurried feeding, bad teeth, the large indulgence in solid foods, associated, perhaps, with alcoholic beverages. Often the offence lies in an inadequate ingestion of water with, as a consequence, concentrated urine, incapable of holding in solution all of the products of excretion, and overburdened kidneys. The symptoms, in brief, are manifold; and may be those of irritation in any tissue or organ. There will probably be bitter taste in the mouth in the morning following bad sleep, a sense of distress after eating, with general malaise. More positive symptoms may manifest themselves with severe lumbago, irritating passage of urine, etc. Often the bilious symptoms are predominant, and vertigo may become very annoying, with muddy skin and complete derangement of intestinal tract. The nervous phenomena are innumerable, as a peculiar "explosive irritability," insomnia, neuralgic and depression of spirit amounting at times to a distinct hypochondriasis. There may be apparently distinct migraine, gastralgia and asthma, with Charcot-Leyden crystals. Many skin troubles are observed. Calculus, with associated colic. High arterial tension and later interstitial nephritis are often the close of the chapter.

Rachford demonstrated many of these symptom groups, ordinarily treated symptomatically, as distinctly significant of lithæmia, and nothing more. Many cases of neurasthenia in his hands at once responded to lithæmic treatment, thus confirming the prevalent opinion that pure nervous exhaustion, neurasthenia, is much more rarely met with than often supposed. Here may be mentioned that pernicious habit of referring every obscure trouble in a woman in the way of nervous manifestation to her generative organs. Dr. Johnson, of Cincinnati, recently called attention to this common mistake. His criticism was qualified by the statement that he did think that in connection with female trouble adhesions might lead to a blocking up of the whole chylopœtic system and this in some way interfere with oxidation. In that brilliant discussion held at the College of Physicians, of Philadelphia, in February (this year) on "the relations of nervous disorders in women to pelvic disease," Wier Mitchell, in speaking of hystero-epilepsy and operation, said, "A large percentage of these cases are not made better by operation, but, on the contrary, are often made worse, or else gain nothing on the side of the neurosis." Then, again, "In all my life I have met with but four reflex epilepsies; none were from uterine or ovarian or tubal disease." On the same subject, Wharton Sinkler urged the frequency of this mistake. "If a woman becomes afflicted with a nervous disorder of any kind, the first thought of her friends is that she must have some disease of her sexual organs. This view is so common that at the present day many cases of purely nervous disease are brought first to specialists in women's disease."

With equal assurance we may maintain that many cases of lithæmia, with varying symptoms, have been and are constantly wrongly diagnosed and treated, and necessarily with unsatisfactory results. Most of all the urinary symptoms are significant—the high specific gravity, the deposit of sandy sediment, or a floating oily scum, the passage of irritating urine. These and associated characteristics are those that mark the disease, and all who will may read. These laboratory studies must be resorted to and repeated as the case progresses. A close study of each individual case, with due observance of the often vague and atypical features, together with the aid of microscope and chemical analysis, will, as a rule, clear up the difficulty.

Diagnosis once established, the question of

treatment at once arises. This is to the patient certainly the practical side, and to us the real object and ultimate aim of medicine that for which all the refinements of clinical study have been wrought out. What is to be done? The old idea that, by a certain diet from which all nitrogenous principles had been excluded, along with exercise, physiological chemistry could be controlled, or that by error in such diet immediate protest would be announced from the insulted system, is in some measure erroneous. The two laws of metabolism, as stated by Stewart, are:

1. "Consumption is largely determined by supply.

2. "Nitrogenous metabolism is nearly independent of muscular work"

This metabolism does not take place in the liver alone, but in every tissue, and is a ceaseless process. The source is not in overproduction of urates, but in deficient elimination. The diet most appropriate has been thus discussed at great length, with case series supporting each claim. Thus the majority of evidence has been on the side of that diet wherein the minimum amount of nitrogenous consumption was reached. This has passed without question for years; yet Armstrong, of London, is now insisting on an exclusive red meat diet, linked with the free consumption of hot water. He believes that it is the mixed diet that is injurious, the carbohydrates interfering with oxidation. This certainly seems reasonable. Under his proposed plan of treatment the claim is, that digestion is more complete and the processes of fermentation and putrefaction are kept within narrower limits, oxidation more perfect and less waste consequently left for a perhaps difficult elimination. These are, in a way, apparent contradictions.

"One thing I know: that whereas I was blind, now I see.". In so much was the scriptural witness positive. This we know, clinically we see the symptoms, and may almost always alleviate them. Certainly the diet should be plain, with the constant exercise of moderation in every way. That the nitrogenous principles should be curtailed to some extent, there can be little question; and at the same time we will grant that indulgence in much carbohydrate is perhaps equally pernicious. An exclusive milk diet would be ideal, but will not be submitted to. Alcohol in any form interferes with oxidation, and thus aggravates the tendency. Exercise is absolutely essential to health; and this is as nearly attained in walking as possible. By this we do not mean a languid lounging-along affectation, but a vigorous, springy, head up, shoulders back, lungs full, style of locomotion, without regard to the smoothness of roadway or density of shade. In fact, cross country in the glow of the sunshine would be preferable. The common requirements of good hygiene should be followed in the matter of sleep and clothing, neither being neglected or slighted in its share of attention. One essential matter is that large quantities of water be consumed, taken at frequent and regular intervals throughout the day, with almost complete exemption at meal times. This point is not a strained one. That most pernicious habit of hurried, half mastication, leaving the food uncrushed and unmixed with saliva, renders necessary that it be swallowed by the aid of a gulp of water, and so on through a meal—a washing-down process, with immense dilution of gastric ferments and retarded digestion. The continual flooding of the kidneys with production of urine of low specific gravity, will of itself hasten elimination. Dr. Mendellsohn, before the Twelfth Medical Congress at Berlin, insisted that dilution had more to do with solvent property of a urine than its alkalinity, which action is at any rate open to discussion. Throughout it appears that a very diluted urine of very low specific gravity, under otherwise equal conditions, can dissolve considerably more uric acid than concentrated urine. This may be proven by actual experiment in the laboratory to the complete satisfaction of any one, by filtering a diluted and a normal urine through uric acid; the first showing a solvent action proportionately pronounced. Here is the typical field for the mineral waters. The magic of the name mineral is wonderful. Without regard to what particular mineral contained this mystical name is the "open sesame" that opens the mouths of millions to waters that are often a stench in the nostrils of all decent people. Yet there are many who must indulge in such heroics in order to accomplish the simple end of drinking water for its own sake. A judicious use of the bath is to be commended. Medicinal treatment alone would prove unsatisfactory. Small doses of calomel for alterative and eliminative action should be administered. Lithia has been much lauded, but of itself it is of little value except as used by Dr. Charles Ransom, of New York, who gives us this method: "I have very little faith in the value of lithia, whether in a natural water or in tablet form. I frequently prescribe lithia tablets, however, but for quite another reason. I find if I order six lithia tablets to be taken, each dissolved in

a glass of water, I have no difficulty whatsoever; in fact, the seventh may be asked for."

Thus it is good for the water that it smuggles in, and for no other reason.

Piperazine has seemed, in my hands, to yield very desirable results. Yet it has not succeeded in establishing its right to the claim made for it. Lately one of the newer synthetical remedies has been much vaunted. Introduced by Stroschin, in 1893, and highly commended by Mendellsohn, Posner, Craig and others, uricedin promises much. This chemical combination of the vegetable salts of sodium, treated with the stronger mineral acids, is said to grant to the urine a high power of solvency. Much more extended clinical observation must be made before it can be accorded a full confidence. It certainly has some diuretic effect, and is a potent remedy for rendering urine alkaline.

Thus, without being confused by apparent physiological contradictions, or etiological discrepancies, we may, by the application of the laws of personal hygiene, the insistance on regularity in all things, coupled with appropriate medication, succeed in overcoming these symptoms—the results of mistaken living.

DIAGNOSIS OF SHOCK.*

By HUGH M. TAYLOR, M. D., Richmond, Va.

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The frequency with which shock is observed, and the difficulties often attending its differential diagnosis, form my apology for presenting this paper.

Shock from Hæmorrhage—Most of us have experienced the embarrassment incident to the difficulties of differentiating between the symptoms of shock and those of hæmorrhage. The following is an apt illustration:

A young man received a knife wound just over the left nipple. I saw him in an hour. Several physicians were with him and had promptly administered whiskey, strychnia, etc. In spite of vigorous treatment, he was still in a state of profound collapse—was, in fact, shocked to such an extent that fatal syncope was anticipated, and several of the doctors present expressed the opinion that the patient would die.

To what was the great depression due? Shock *per se*, or to shock plus hemorrhage? The general impression among the medical men in attendance was that it was shock plus hemorrhage—hemorrhage incident to penetration of the chest and wounding of the heart, lung or some large blood vessel in the cavity of the chest. It was an important question to settle. If it was uncomplicated shock, only such remedial measures as are indicated in shock need be resorted to, and an encouraging prognosis could be given. If it was shock plus hemorrhage, the prognosis was grave, and operative interference for the purpose of arresting hemorrhage was probably called for.

Vigorous treatment for the relief of the profound syncope seemed clearly the proper line of treatment, but if there were severed blood vessels within the chest, reaction without hæmostasis would mean more bleeding and renewed depression. In this case, it was dangerous not to resort to heroic measures to overcome the profound shock, and yet, if there was hemorrhage, speedy and complete reaction would entail fully as great a danger in the renewed hemorrhage. Physical examination of the chest failed to show an accumulation of blood at any point as evinced by its pressure effects. Nothing was discovered which warranted the conclusion that there was extravasation of blood in either the pleural or pericardial sacs, or in the mediastinum or cellular tissue, and there was but a trifling amount of bleeding from the external wound.

On inquiry, it was ascertained from one of the physicians, who saw the patient a few minutes after the cutting occurred, that the shock was at that time as profound as at any subsequent period. In short, the symptoms of profound syncope were immediate in their onset, reached their acme at once, and were not progressive in character. This knowledge was the key to the situation, and justified me in excluding hemorrhage and in diagnosing shock.

In an hour or two, safe reaction was brought about, its advent having been hastened by the usual remedies in shock, viz: strychnia, morphia, digitalin and atropia hypodermically, and hot saline solution, whiskey and coffee by enema. Response to treatment was, in fact, so very prompt that we did not find it necessary to resort to cellular or intra-venous transfusion, preparation for which was begun as soon as the patient was seen. A due appreciation of the embarrassment incident to such cases intensifies our interest in all that pertains to the diagnosis of shock.

In many of the traumas of the great cavities, viz: the skull, chest, abdomen, pelvis and spine, it is often a perplexing matter to differentiate

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between the symptoms of shock and those of hemorrhage, or between those due to shock and some more serious morbid lesion. In the case of trauma to the skull, or, more properly, its contents, we expect shock. The nice point in diagnosis is to ascertain, in the incipiency of the troubles, to what extent the manifestations of injury are due to shock *per se*, and what part is the result of intra-cranial lesion.

What are the brain lesions whose symptoms are at one time or another identical with those of shock? There is hardly an injury to which the brain is liable that may not primarily manifest only the symptoms of shock, and exceptionally, even in the gravest intra-cranial traumas, the symptoms at first are only those of shock.

I recall the case of a drunken man who tried to jump on a moving train. He was thrown, his head striking on a cross-tie. As a result, one side of his head was crushed like an egg shell. In a few hours he was brought to Richmond. I met him at the depot. He was perfectly conscious, and gave me an intelligent account of how the accident occurred. He was able to walk from the car to the carriage and to sit up while being driven a mile or more to a hospital. In the operation immediately resorted to on reaching the hospital, I lifted *out* of, more than *off* his brain, fragment after fragment of bone, and from one point of his brain I fished out a plug of wood as large as the end of my thumb.

Here was a case of compound comminuted depressed fracture of the skull, with serious brain laceration, and a total absence of the stereotyped symptoms of such an injury. The symptoms for the first six or eight hours after the accident were only those of shock, and were not even of a severe type.

A case in point was seen yesterday. A little boy was struck by an engine and suffered a compound depressed fracture of his cranial vault. He was brought to Richmond, and I saw him in two hours after the accident. He was profoundly shocked—cold, clammy, no radial pulse, blanched features. He was reported to have bled freely from the skull wound immediately after the accident. There were no brain pressure symptoms whatever—no paralysis, no stertor—only symptoms of profound shock. There was now no hemorrhage when I saw him. He had evidently, prior to that time, bled until his blood vessels were collapsed. Treatment for shock and hemorrhage was vigorously resorted to. As his condition did not improve in a few hours, the depressed bone was elevated. The dura was found torn into the superior longitudinal sinus, and explained the profuse hemorrhage and profound syncope. My only surprise is that he did not bleed to death at once; as it was, he had practically lost all of the blood in his vessels. An incision of the dura showed that the brain was uninjured. How were we to tell that the shock in this case was that of hemorrhage, and not brain contusion and brain pressure? It is evident to my mind that the torn sinus and hemorrhage, and not the depressed bone, caused the fatal issue.

The differentiation between rupture of the middle meningeal or middle cerebral artery, or some of their branches, and shock is often a nice and all-important point. As is well known, it has not been long since we have known the symptoms of such ruptures well enough to make a diagnosis, and formerly the mortality from such injuries was frightful. A correct diagnosis and operation to remove the clot and stop the bleeding marks one of the most important of the many advances in cerebral surgery. The successful treatment of such a case involves, of course, an early diagnosis and removal of the clot before the onset of the disastrous consequences upon the brain, incident to prolonged pressure by clot. If the case is one of shock, the treatment is simple and the prognosis favorable. If there is ruptured artery, trephining to tie the artery and remove the clot is called for, and the prognosis is not so good. Ordinarily, a rupture of one of the arteries presents the following clinical picture, and materially aids in differentiating this condition from shock. In rupture of the middle meningeal artery, the injured person, after a lick on the head, usually falls, is stunned or shocked; but after a varying period of syncope or shock, the patient recovers consciousness; his mind becomes clearer, and perhaps he gets up and walks about. In a short time, however, which varies with the rapidity of the out-pour of blood, he again becomes unconscious, with the usual symptoms of pressure on one or more of the centres along the motor area. Shock, then, followed by reaction, and recurring shock plus pressure symptoms points to intra-cranial hemorrhage, and usually a rupture of some branch of the middle meningeal or middle cerebral artery.

A case in point: A gentleman, in lifting a window sash, lost his balance and pitched out into an area a few feet deep. He was shocked, stunned and dazed, but in a short time recovered sufficiently to walk a half a mile to his boarding-house. Reaction was strong, and there were no symptoms of cerebral injury for four

or five hours; from that time on, however, he presented all the symptoms incident to the gradual formation of a widening clot—center after center along the motor area becoming involved as the area pressed upon increased. Here was shock with reaction, lasting hours, with recurring shock and pressure symptoms. Prolonged shock would suggest rupture of a large artery (the main trunk of the middle meningeal), or a number of arteries with rapid effusion, and the merging of the symptoms of trauma into those of shock from hemorrhage and pressure.

Shock and hemorrhage fortunately do not, as a rule, occur simultaneously. Profound shock is one of nature's most potent hæmostatics. All of us have seen patients bleed until they are shocked; then the bleeding spontaneously stops, to recur possibly with the partial advent of reaction. Shock restrains hemorrhage, and in cerebral lesions is often beneficent. Hemorrhage induces shock; cerebral hemorrhage is supposed to induce more profound shock than hemorrhage from other parts of the body.

In intra-cranial injuries, if the primary shock is followed by reaction, which is lasting, we may feel well assured that we have not intra-cranial hemorrhage to contend with. On the other hand, shock with reaction and recurring shock, or prolonged shock, point strongly to intra-cranial hemorrhage. This difference in the onset of symptoms of shock and hemorrhage is our only diagnostic means, and the importance of making a correct diagnosis in order to adopt a rational course of treatment or give an intelligent prognosis is of the utmost importance.

Shock followed by reaction lasting twenty-four hours or more, and which is then succeeded by recurring shock, stupor, delirium, or cerebral irritation, usually points to cerebral contusion or laceration, with sero-sanguinous effusion. This condition of cerebral contusion probably represents the so-called prolonged shock of the older writers. The term prolonged shock is, we think, here as elsewhere, a misnomer. The term cerebral contusion is very much better, as it represents or expresses a pathological lesion and suggests its possible consequences.

If the symptoms of shock are prolonged beyond the period of time during which shock should continue, and are merged into or succeeded by symptoms of cerebral irritation or stupor, we have a condition of cerebral contusion plus shock.

Only a few weeks ago, a gentleman on a bicycle collided violently with a horse and buggy. I was at hand when the accident occurred and had the patient carried into the nearest house. He was badly shocked, but was that all? Anxious friends made urgent inquiry as to the future of the patient. The case proved to be one of brain contusion, and it was weeks before the patient was out of immediate danger. No symptoms, other than those of shock, were at first appreciable to enable us to make an early diagnosis and to give a correct prognosis.

In cerebral concussion, so called, we have a clinical picture which cannot be differentiated from shock. This is true to such an extent that many writers deprecate the use of the term cerebral and spinal concussion, in that it represents no known pathological lesion and presents no appreciable symptoms which are not equally characteristic of shock. If we compare the symptoms of concussion with those of shock, we find they are identical. If there is any lesion common to so-called concussion, it cannot be discovered by our imperfect means of examination.

It is claimed by some that lesions do occur in concussion, but are not appreciable by our imperfect methods of examination. In the absence, however, of demonstrable proof of such lesions, this assumption only assumes the dignity of a hypothesis. We are in accord with the opinion of those who think the term cerebral and spinal concussion should not have a place in the nomenclature of diseases.

Shock in injuries of the chest.—In trauma of the chest, it is often difficult to differentiate between shock and hemorrhage. The constitutional symptoms of shock and hemorrhage are the same, but here, as elsewhere, the time of onset of symptoms is significant—shock occurring immediately and reaching its acme at once, while hemorrhage appears more slowly (unless it is from a large vessel), and is progressive and more persistent in its effects. Reaction from shock, under proper treatment, is prompt and lasting. Profuse hemorrhage intensifies and prolongs shock and entails acute anæmia, which is not speedily recovered from.

In addition to the information incident to a knowledge of the time at which shock should occur and its subsequent behavior in chest wounds with hemorrhage, we should expect symptoms due to pressure of accumulated blood.

Obviously, a distended pericardial sac entails an increased area of cardiac dullness, an embarrassed heart action and obscured heart sounds, and to some extent it results in pressure on the lung by the distended pericardium and interference with respiration.

Distension of the pleural sac with blood

should also be appreciated by dullness and symptoms of pressure on the lung and heart. Briefly, our diagnosis of shock from intra-thoracic bleeding must depend largely upon ascertaining the facts as to the time of the onset of the constitutional symptoms of shock, the length of time these symptoms continue, whether or not they reach the acme at once or are progressive, and the presence or absence of symptoms due to pressure of blood accumulations.

Shock from intra-abdominal lesions.—In no class of traumas and in no field of surgery is the diagnosis between shock and hemorrhage beset with greater difficulties than in the case of injuries of the abdomen. Penetrating and contused wounds of the abdomen, with visceral lesions, are attended with such a frightful mortality that an early diagnosis is imperative.

The key to the successful treatment of cases is their early recognition before the occurrence of acute anæmia from hemorrhage or septic peritonitis from extravasation of the contents of the hollow viscera into the peritoneal cavity. The mission of operative interference is ideal, when we operate to prevent such complications rather than when it is done to cure them. In all such cases, interest largely centers in the inquiry—

Is it shock *per se*, incident to trauma, limited to the abdominal wall?

Is it shock with penetration and visceral lesion?

Is it shock with solid or hollow visceral lesions?

By what tokens are we to know when the shock of trauma ends and that of hemorrhage or sepsis begins?

It is a well known fact that profound and fatal shock may exceptionally attend a slight blow on the abdomen, which inflicts no lesion to the abdominal walls or upon the underlying viscera. The fate of our distinguished (?) countryman, James Corbett, is an evidence of the seriousness of a blow on the solar plexus.

On the other hand, it is equally well known that serious and fatal abdominal lesions may exist with a total absence, or at least a minimum amount, of shock. It is not uncommon for a man who has been shot through and through his belly, or whose abdominal viscera have been torn by a contusion, to experience at first an inappreciable degree of shock. Most of us have, perhaps, seen a man shot in the belly, and, under excitement, continue to manifest great physical endurance. This, however, is the exception. As a rule, a ruptured or wounded hollow or solid viscera is attended by appreciable shock. In the former case, shock is largely due to extravasation of the hollow visceral contents; in the latter instance, to the loss of blood and the presence of blood as a foreign body in the peritoneal sac.

While this is the rule, exceptions occur sufficiently often to render the presence or absence of shock of no diagnostic value when taken alone in estimating the nature or extent of the abdominal lesion. The presence or absence of shock is no guide in diagnosing a non-penetrating from a penetrating wound of the belly. Nor does it tell us a contused wound of the abdomen, with visceral lesion, from one in which only the abdominal walls are injured. In penetrating wounds of the abdomen, it is no guide as to the presence or absence of visceral lesions. While shock *per se* is no guide here as elsewhere, the behavior of shock is of diagnostic interest. Uncomplicated shock should pass away, in a short time, in a few hours Shock followed by reaction, which is succeeded in a few hours by recurring shock, points to wound of some one or more of the solid viscera, or to an injured mesenteric vessel, the recurrence of shock being due to hemorrhage and the mechanical irritation of the accumulated blood. In the case of a wounded hollow viscera, the extravasation of its contents into the peritoneal cavity induces renewed shock which is primarily due to the irritation of a foreign substance, and secondarily it is due to a general or local fibrino-plastic, purulent or septic peritonitis.

Prolonged shock after abdominal contusions and wounds suggests something more than a vaso motor paresis or a vaso-motor over-stimulation and paresis, and indicates that the symptoms of primary shock have merged into those of hemorrhage; or in the case of rupture or wound of the hollow viscera, primary shock has been augmented by shock incident to extravasation and the beginning of peritonitis.

I was once sitting by the bedside of a young woman telling her she had tubal gestation, and that an early operation was necessary. While I was thus engaged, she became cold, clammy, blanched, and pulseless—all the symptoms of profound shock. Was it psychical from the horrible news I had just conveyed, or was it hemorrhage from ruptured tubal gestation? Its progressive character and continuation warranted the conclusion that the syncope was due to hemorrhage, and an immediate operation disclosed a ruptured tube and peritoneal sac enormously distended with blood. As I have said, I do not believe very much in prolonged shock, and especially is this true as to intra-

abdominal lesions. Many of the fatalities credited to shock, should, I think, be attributed to shock plus intra-abdominal bleeding

Shock prevents hemorrhage at first, and notably after intra-abdominal work is beneficent, saving lives when insufficient hæmostasis has been secured As a rule, shock from intra-abdominal trauma is immediate in its onset, reaches its acme at once, and is not progressive. Shock from hemorrhage and sepsis comes on slower and is progressive and more lasting in its effects. Not shock, *per se*, but the way in which it is manifested, constitutes it a guide of inportance in intra-abdominal lesions.

It is not infrequently a difficult matter to differentiate between shock and septic intoxication. The toxæmia incident to typhoid gall tract and appendicular infection is in some instances so rapid in its onset as to closely simulate shock. Shock and fat embolism, and shock and venous thrombosis present many symptoms in common. Doubtless not a few of the so called cases of prolonged shock are really cases of fat embolism or thrombus; but both of these conditions are more likely to occur later than the time during which shock should continue and are usually associated with a special class of wounds.

Are the effects of shock always transitory? A phase of shock of interest and importance, from a diagnostic point, is its relation to trauma of the nervous system, and one of its supposed sequences, the so-called concussion of the cord. I must beg to be classed with those who deprecate the use of the term spinal concussion. As in the case of brain concussion, spinal concussion is a misnomer and misleading, and under the guise of railway spine, has done much harm and no good.

Concussion of the spine or railway spine is shock, psychical or traumatic—psychical when an impression without trauma has been made upon the central nervous system by horrible surroundings of any nature, usually upon an impressible temperament. Traumatic hysteria, neurasthenia, or neuroses are closely related to shock, as it is the effect of shock upon the central nervous system, and is usually an effect which, in severity, is out of all proportion to the extent of the injury. In traumatic neurasthenia, there is no appreciable lesion which can be held responsible for the symptoms Some of the most difficult problems we are called upon to solve are the distinction between neuroses incident to shock and those due to organic lesions. Shock is supposed to be transitory; traumatic neurasthenia—an effect of shock—is lasting, and is an evidence that reaction from shock does not necessarily mean that the morbid effects of shock have been recovered from. Profound shock, psychical or traumatic, is to be deprecated, not only on account of its immediate, but also because of its possible remote consequences. Perverted nerve force, incident to the immediate and remote effects of shock, entails improper functional activity, and as a further consequence diminished local and systematic tissue resistance with all that such a condition implies in the conflict between health and disease.

COCAINE ANÆSTHESIA IN PERINEORRHAPHY.*

By W. H. HUMISTON, M. D., Cleveland, O.,

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It has been ten years since I began the use of cocaine in minor gynæcologic surgery, reporting my first three years' experience at the meeting of the American Medical Association, held in Washington, D. C., in 1891, and again two years latter at the meeting in Milwaukee.

These reports embraced the use of this drug in curettement, trachelorrhaphy, and in the simple split-flap operation of Tait. The success thereby attained in frequent demonstrations to members of the profession visiting my hospital led me to hope that I could extend its possibilities in the plastic work of the vagina and perineum.

In my earliest experience, I used a 4 per cent. solution of cocaine hypodermically and quite frequently. It was observed that the patient had quickened respiration and a sense of oppression over the præcordium, especially when more than one and a quarter grains were given.

These untoward symptoms were allayed in a certain proportion of cases by the administration of one-thirtieth of a grain of strychnia hypodermically, and one-half ounce of whiskey thirty minutes before operation. However, by experimentation, I found that the same quantity of a 2 per cent. solution had equally as great anesthetic properties as the stronger solution.

Through this, I was encouraged to attempt a repair of a lacerated perineum complicated by a large rectocele in a patient who was poorly nourished, frightfully nervous, and above all, exceedingly fearful of the effects of a general

* Read before the Mississippi Valley Medical Association, Louisville, Ky., October 8, 1897.

anesthetic. She had been an invalid for a long term of years consequent upon the almost complete rupture of the perineum, deeply lacerated and cystic cervix, and retroversion of the uterus, with the natural congestion of the appendages following this abnormal position of the uterus.

Two weeks previous to the repair of the perineum, I curetted the uterus and repaired the cervix under cocaine anesthesia with the happiest effect.

The Emmett's operation upon the perineum, by the method to be described, was completed in thirty-five minutes, during the whole of which time the patient was unconscious of any pain, and talked continuously.

I have repeated this procedure in a number of cases, and am very well pleased with it.

The maximum quantity of a 2 per cent. solution was fifty minims, giving a minimum dose of one grain of cocaine.

By the use of cocaine, we avoid the prolonged vomiting that so frequently follows the use of chloroform or ether, with the great strain and irritation upon the parts operated, which frequently results in failure to obtain union.

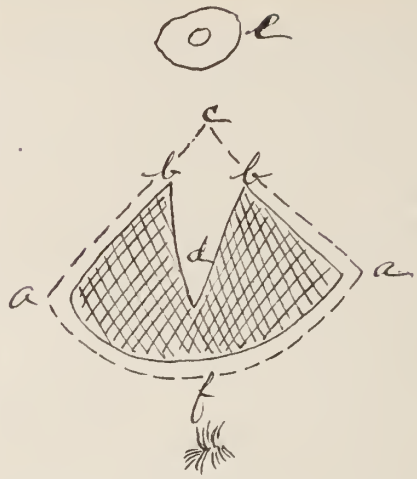
I have frequently been asked if the infiltration of the parts did not interfere with the primary union. I have never seen such interference. The line of union heals most promptly and efficiently without *local* or *general* reaction.

Technique.—Thirty minutes before operation, give patient one-half ounce of whiskey or brandy, to be followed by a hypodermic injection of one-thirtieth of a grain of strychnine. The usual strict precautions should be taken to make the field of operation aseptic.

A sterile and *fresh* solution of cocaine must be used. My plan is to have a number of two-drachm bottles thoroughly sterilized, and then to place in each vial two and a half grains of either Merck's or Squibb's cocaine hydrochlorate. The bottles are sealed, and when a solution is required, boiled water is added.

The length of the hypodermic needle is also of importance, because as few punctures should be made as possible.

The needle is inserted at *a*, and a sufficient quantity of solution is injected until a round white wheal is formed. Then plunging the needle forward again *without withdrawing it*, another wheal is made; and so on until a series of wheals are formed from *a* to *c*. The needle is then partially withdrawn, and the point is turned toward *f*. Here again a succession of wheels from *a* to *f* is made. The same procedure is repeated on the opposite side. You will notice that there are but *two* punctures necessary.



aa. Lower caruncles of hymen and points of puncture.
bb. Upper angle of sulci.
c. To which point the injections should be carried from aa.
d. Crest or tongue of rectocele.
e. Cervix uteri.
f. Median line.
g. Anus.
a-f-a. Line of juncture beneath skin and mucous membrane.

The whole area included in *a c a f* is now anesthetized, and the part to be denuded—namely, *a b d*—can be operated upon without giving rise to any sensation or pain.

The formation of the wheals will cause no suffering if gradual and even pressure is brought to bear upon the piston.

The amount of cocaine necessary to thoroughly anesthetize the parts will vary from three-fourths to one grain.

Strict asepsis, a reliable cocaine, and the above technique faithfully followed out, will give very satisfactory results.

122 *Euclid Avenue.*

HAVE WE FOUND A "RADICAL CURE" FOR INGUINAL HERNIA?*

By W. B. DeGARMO, M. D., New York, N. Y.,

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When I was honored by an invitation to read a paper before your Society, I felt all the more inclined to accept because I had already experienced the pleasure of attending one of your meetings a few years before. At that time, I read a paper upon the subject covered by my present title, and I am glad to have the oppor-

* Read before the Twenty-eighth Annual Session of the Medical Society of Virginia, held at Hot Springs, Va., August 31, September 1 and 2, 1897.

tunity now afforded of bringing before you a riper experience, fortified by an almost complete revolution in the subject treated of. In the grand advance of the science and art of surgery during these few years, the special surgery relating to the treatment and cure of abdominal hernia has not been left in the rear. Perhaps, aside from that of pelvic surgery, no branch has made an equal advance.

The term radical cure, as applied to the treatment of hernia, has been badly misused for many years, being used as descriptive of operations that were more frequently failures than successes. We have had operations for the radical cure, injections for the radical cure, trusses for the radical cure, until the term has become such an abuse of the truth that many of us had abandoned its use, as well as hope in its ultimate fulfilment.

Why were former operations not radical cures? We have little time in this age of rapid advancement to discuss past failures, except to ask why they failed; and our recent experience in this subject has answered this question, and it now seems strange that we should have remained so long in the dark. It is a repetition of the old story of Columbus and the egg. After he had shown them how, they could all make it stand on end.

I take from my shelves a treatise on surgery, considered an authority at the time that my medical studies began, and find this sentence relating to the subject under consideration:

"The operations that have been devised for the radical cure of hernia are all founded on one of two principles, viz., the excitation of such an amount of peritonitis in the sac, or its neck, as to secure its obliteration, or the plugging of the hernial aperture by invagination of the integumental tissues."*

In view of such teaching, it is not surprising that there are still many middle aged practitioners, men who have been absorbed in the general practice of medicine, who do not realize that we have left that age of surgical darkness and entered one of broad daylight.

Almost without exception, the early operators felt that the essential step in obtaining a cure for hernia was the destruction of the hernial sac, and every means consistent with the safety of the patient was resorted to to accomplish this end. There was, however, the time-honored dread of approaching the peritoneal cavity or any prolongation of its lining membrane, the peritoneum, which prevented anything really radical being done.

Up to the time of Reisel, of Germany, few had ventured to make an opening further than the outer muscular layer of the abdominal wall, and after cutting off the sac at this point (considered a rather rash procedure) various methods of closing up the external, or superficial, abdominal ring were resorted to.

Reisel was undoubtedly on the right track when he advocated splitting the aponeurosis of the external oblique muscle, so as to expose the whole length of the inguinal canal, but his operation failed because of the subsequent defective closure of the parts.

Closely following this was the operation of my eminent townsman, Dr. McBurney, who went even farther towards a final success by opening the canal to internal ring, clearing it of all foreign matter and tying off the hernial sac flush with the peritoneal surface. The subsequent steps in his operation, however, were fatal to its permanent success Dr. Marcy, of Boston, had shown us the safety of the buried suture, and had insisted upon the necessity of restoring the obliquity of the canal, but the honor must be given to Bassini, of Padua, Italy, for finally supplying us with an operation apparently complete in its technique, and fortified by a simultaneous report of an unprecedentedly large number of cases; an operation which has, up to the present time, been performed upon a larger number of persons, with greater safety and a larger degree of success, than any other in the history of the subject. Dr. Halsted almost simultaneously published his operation, nearly identical, but not accompanied by the larger number of cases.

Why then the former failures and our present success?—To answer this intelligently, we must for a moment consider some of the predisposing causes of hernia. In most works on this subject you will find elaborate discussions upon elongated mesentery, muscular relaxation, etc., which, doubtless, all have some element of truth in them; but, in the light of recent experience, personally, I am convinced that there is an inherent defect in the muscular structures of man in what should form the posterior wall of the inguinal canal, and that operations which fail to overcome this defect cannot be relied upon to effect a cure.

The lower borders of the internal oblique and transversalis muscles start from Poupart's ligament, and, arching over the cord, find attachment in the pubic bone, but do not pass back of the cord. The cord, therefore, traverses an irregular triangular space, bounded above by the lower borders of the muscles named, outside by Poupart's ligament, and the base being represented by the pubic bone. Practi-

* Erichsen's Surgery, 2nd American Edition, page 771.

cally, the canal is unprotected at this point by posterior muscular wall. This triangle forms the weak spot in the anatomy of the parts, and was never taken into consideration in the older operations for hernia, but is now fully overcome, as will be demonstrated later on. That this muscular defect is a serious predisposing cause to the occurrence of hernia will, I feel sure, be admitted by those who have a large experience in the present method of operating, and therefore opportunity for observation.

Another cause seldom mentioned, but frequently met with, is the formation of fatty growths, either between the muscular layers, or, more frequently, just in front of the peritoneum, which slip into the canal and act as a dilating wedge. Then, again, we have enormously enlarged veins, connected with the cord, which, by their presence, tend to dilate the canal. These are merely mentioned as causes which were never reached or remedied by the older methods of operating. Besides these, there was always the more or less thickened sac, which, left as a serous lining in the upper part of the canal, invited a recurrence of the protrusion.

All of the old operations dealt with hernia by remedying the defect as found at the *external ring*, leaving any defect that might exist in the canal; on the contrary, we now begin our repairs at the *internal ring*, after every abnormal structure has been removed.

Without further retrospect, we will consider for a few moments our present methods of operating and the results obtained, then we shall be in a better position to answer the question asked by my title.

Among the members of your society you number some of the most eminent American surgeons; who are, doubtless, familiar with every detail of this operation, and to such even a brief recital of its technique may be tiresome; but I assume that the larger part of my audience are general practitioners, who have not seen it demonstrated, or who, at least, do not see why this should succeed when so many others have failed. Perhaps, I will be pardoned, therefore, for rapidly going over it for their benefit.

A slightly curved line drawn from the anterior superior spinous process of the crest of the ilium to the spine of the pubes, represents the location of Poupart's ligament. The incision, for the Bassini operation, should be about three-quarters of an inch inside of this line, extending from over the superficial abdominal ring about three inches upward and outward. The two underlying layers of fascia should be cut through, revealing the aponeurosis of the external oblique muscle, which will be recognized by its white glistening surface and the direction of its fibres. With the fascia will be cut the superficial epigastric and superficial pubic vessels, which require clamping, and sometimes subsequent ligation.

At the lower angle of the incision, if it has been properly made, the superficial ring will now be seen, usually with the hernial sac bulging up out of it. A grooved director should be slipped under the aponeurosis of the external oblique muscle, at the external ring, in the direction of the canal, and this tissue split by scissors or knife, to a point opposite, or a little above, the deep inguinal ring. You now have the entire canal exposed to view, and you proceed to lift the sac, and the cord to which it is quite uniformly attached, out of its bed.

The separation of the cord from the sac, especially in hernia of the congenital variety, is the most difficult step in the operation, and some have failed entirely in its accomplishment.

The cause of failure has been, I think, due to making the attempt too low down. The separation must be accomplished almost entirely by the fingers, and I have found that clearing one place on the sac surface, and rolling the sac in one direction between the thumb and finger, while the cord and fascia are held between the thumb and fingers of the other hand, is the easiest way to accomplish it, and that the middle of the canal is the best point to begin.

The hard and wiry feel of the vas deferens should always be borne in mind, as this will lead to the location of the cord in cases of doubt. Having obtained complete separation at one point, little trouble will be experienced in stripping the cord free up to the peritoneal surface, and as far down as may seem advisable.

The sac should be opened in every case, as only in this manner can you be certain that it does not contain adherent omentum, or, possibly, intestine. One operator has been so unfortunate as to tie a loop of bowel in the neck of the sac by neglect of this precaution. I am in the habit of having the assistant tie the neck of the sac (with cat-gut) while I hold one or more fingers in its neck, thus avoiding possible protrusion under the ligature.

After tying, the sac is cut off outside the ligature, and its fundus stripped out entire if this can be easily done. If, however, the sac is very large and closely adherent, that part which occupies the scrotum may be left in place—that

part only which passes through the canal being removed. Having removed the sac, any other foreign body present can be taken away, and this should include all small growths of fat, which are very common, and prevent a subsequent matting together of the various layers.

The opening of the canal and clearing it of all structures that do not belong there is unquestionably a great advance, but it certainly would fail, as it has, were it not for the step in the operation now to be described. Mention has been made of the relation of the lower border of the internal oblique and transversalis muscles to the canal, and they will now be plainly seen going just above the cord to their attachment to the pubic bone, and it will as readily be seen what a weak place in the anatomical construction of the parts this is.

The parts are reconstructed in the following manner: The cord being held up out of the way, a blunt curved needle, threaded with kangaroo tendon, is passed through the lower borders of the internal oblique and transversalis muscles well up towards their attachment to Poupart's ligament. The needle is now carried under the cord and through Poupart's ligament. This suture, when tied, brings the borders of the muscles named closely around the cord at the upper angle of the wound, and the muscles are now brought in contact with Poupart's ligament all of the way down to the pubic bone, by continuous suture. We now place the cord upon this new muscular posterior wall, which never existed before, and stitch the divided aponeurosis of the external oblique over it, the skin being closed over this. This differs from Bassini only in the suture material, he using silk instead of the buried animal tendon. But as the latter proves fully as efficient and less liable to form a sinus, it is preferred by most American operators.

WHAT, THEN, HAVE WE DONE?

First. Cleared the canal of the hernial sac, and of any other foreign body that may have been found there.

Second. Constructed a new posterior wall by carrying the muscular layers back of the cord, which are not found there in the normal subject.

The treatment of the case subsequent to the operation is usually very simple All possible precautions to secure asepsis have been observed, and it is expected that primary union will result. After closing the skin by catgut and dusting aristol over the parts, a good firm bandage is applied, and this is not disturbed for ten days, unless there is elevation of temperature, or pain, indicating that all is not going well with the healing process.

In the two hundred and fifty cases reported by me before the American Medical Association, at Philadelphia, last May, there was primary union in two hundred and seven. In the fifty-five children under fourteen years of age, there was failure to obtain primary union in only one instance, which clearly indicates that in childhood the ability to resist infection is much greater than in adult life.

In speaking of the result of the operation, I shall draw upon my personal experience only. This, however, is fully in accord with the author of the operation and most other operators.

One honor, I believe, I can claim, and that is the largest number of hernia operations, by any method, without a single death. Up to the present time, I have done two hundred and seventy-eight Bassini operations upon patients of all ages and conditions, and that without any dangerous symptoms following in any case.

The ages of the two hundred and sixteen patients upon whom the two hundred and fifty operations were performed, already tabulated, were as follows:

Under 14 years	55
Between 14 and 40 years	98
Between 40 and 60 years	47
Between 60 and 80 years	14
Over 80 years	2

Conditions at Time of Operation.

Right inguinal	154
Left inguinal	96
Double inguinal	34
Scrotal	93
Reducible	178
Irreducible	55
Strangulated	17
Omentum excised	55
Testicle in canal	9
Ovary in canal	3

Time of Discharge.

By fourteenth day	114
By twenty-first day	198
By twenty-eighth day	210
Over twenty-eight days	6

One patient, a physician, operated upon for a good-sized hernia, left the hospital on the eleventh day, and the same night took a train for Detroit.

Two important points remain for consideration: The dangers attending the operation

and the permanence of the cure. Besides my own two hundred and seventy-eight cases, I can, from five of those who have operated most extensively by this method, collect reliable results in over one thousand cases, which give only three deaths, and at least two of these can scarcely be attributed to the operation.

In recurrences, Bassini had seven out of his first two hundred and fifty cases. I have had seven recurrences, three of which have been re-operated upon: and as the special cause of recurrence was removed by the second operation, there is every prospect of permanent cure, leaving only four actual failures. Even in these four, the patients are in better condition than before the operation. Only two have sufficient recurrence to require the application of a truss. The others are wearing light belts.

My answer, then, to the title of this paper is, that we *have* found a "radical cure" for inguinal hernia. If any man on this floor wishes to argue against this conclusion, he has for his use the entire history of the subjects up to the advent of this operation, because they were all failures. But I am sure that even that mass of evidence will not stand up before that which can be adduced in favor of the Bassini method.

THE SANATORIUM TREATMENT OF PULMONARY PHTHISIS.*

By CHARLES F. McGAHAN, M. D., Aiken, S. C.,

Vice-President American Climatological Association.

It affords me great pleasure to address this Society, and I am pleased to bring before you a subject most of you will think is almost discussed threadbare; but to those of us working in this special line, it is but in the infancy of its growth. I will call your attention to the *treatment of pulmonary phthisis*, in the hope that the subject will elicit a general discussion on all the methods in vogue at the present date for combatting this disease.

I will divide the subject into three heads—namely, (1) Is not a sanatorium the preferable place to treat pulmonary phthisis? (2) Treatment of the patient in general; (3) Treatment of special symptoms.

For fifteen years, I have observed and treated phthisis at one of the most noted health resorts of this country; and though I have seen a great many cures, and many who were benefitted, and had their lives prolonged by visits there, yet I have been impressed with the idea that we have not sufficient control of our patients at the different health resorts. I have frequently seen a patient who would follow instructions closely for four or five months, and improve steadily, undo all the good that had been accomplished by a single act of indiscretion—often committed through ignorance. I therefore consider it wise that phthisical patients should be in a sanatoria where they are constantly under the surveillance of competent persons. I also think it necessary that they should be seen every day by the physician in charge, who is then able to prescribe for each one the amount and kind of exercise and nourishment they should take. To all these minute details the strictest attention should be given, as it is upon the close watch given patients in these things that we can hope to see them improve and overcome the disease.

I have at Aiken a small sanatorium, which is a charitable institution, erected by donations from philanthropic friends in the North—entirely through the exertions of Miss Louise P. Loring, of Boston. It is built upon the cottage plan, designed after the Adirondack Cottage Sanatorium at Saranac Lake, under the care of Dr. E. L. Trudeau, each building containing four patients. Being a charity, we only take patients in what is considered the first stage of phthisis when there are hopes of recovery, so as to be able to send them into the world again as bread winners.

The "modified tuberculin of Koch" is still under experiment. The results obtained from the use of the serum of Marigliano, Bearing, and Paquin, are as yet too unsatisfactory, and the price too high, for experimental work in hospitals. I have not used Marigliano's or Bearing's serum, and my correspondence with Dr. Paul Paquin did not answer fully the questions upon which I was anxious to have information, so I used his serum most cautiously in one case; the results were most alarming, and I have not dared to employ it further.

Creosote, its compounds and derivatives, are remedies so well known that there is little I can say for or against them that you do not already know. There is, however, one suggestion I will make—that is, if it be prescribed for its aid to digestion, and thus assist assimilation, give it in small doses, not over five drops of pure beechwood creosote or its equivalent, three times a day. Large doses, given by the digestive canal, will in time produce irritation, so that the stomach will become intolerable to all kinds of food; and the length of time it will take to cause this irritation of the stomach

* Read before the Mississippi Valley Medical Association during its Session in Louisville, Ky., October 5-7, 1897.

is simply reckoned by the strength of the digestive apparatus. If you wish to give it for its aseptic action on the blood, I would advise you to use guaiacol hypodermically, as recommended and ably described by Dr. J. G. Sinclair Coghill, of Ventnor, before the meeting of the British Medical Association in London, in August, 1895.

The different specifics that have been recommended in the past few years for the cure of this disease have all been weighed in the balance and found wanting.

This summer I had the pleasure of spending two months abroad visiting the consumptive hospitals and sanatoria of England and the Continent. I enjoyed very much looking over Brompton Hospital, and afterwards had a long chat with Dr. Theodore C. Williams. I was much pleased with the new addition to Brompton, and consider the ventilation as near perfect as is possible to make it; still I do not believe in crowding phthisical patients into one building. They were using Marigliano's serum, but were of the opinion that it was still an experiment, and could not say they had derived any benefit from its employment. They were treating their patients with inhalations of creosote by saturating a room with its vapor, the patients inhaling it for from half an hour to an hour. They also use the pneumatic cabinet.

From there I went to Ventnor, where I was most kindly shown over the Royal National Cottage Hospital for Consumption by Major Thos. H. K. Payne, the Superintendent. Their system of extracting impure air from rooms and halls of the cottages, and forcing fresh air in by fans, is simply perfect, and worthy of a trip to England to see. Their disposition of sewerage is faultless, as it is conducted by pipes for three-fourths of a mile and then emptied into the channel. Dr. Coghill is the senior physician in charge; he has under him two visiting physicians, and two resident medical officers. They use the hypodermic injection of guaiacol principally, and plenty of fresh air, causing the patients to remain out of doors most of the time. The climate of Ventnor is very damp, and is therefore detrimental to obtaining any very great results. It is an excellent charity, of which the English people ought to be proud, and most certainly deserves their strongest support.

The next sanatorium I visited of note was Hohenhonnef on the right bank of the Rhine, between Linz and Bonn, with an altitude of 200 feet, under the charge of Dr. Meister, who was formerly an assistant of Dr. Deitweiler. Unfortunately, Dr. Meister was not at home, so I did not have the pleasure of meeting him, but his first assistant most kindly showed me all over the institution. This being a pay sanatorium, the sleeping, sitting, billiard and reading rooms were very elegant and luxurious. One feature that I particularly liked was the arrangement of the dining room and kitchen, which were across the road and connected to the building by a covered way. In this institution, besides the douche room for hot and cold douches all over the body, was also a special douche room where patients suffering from laryngeal phthisis washed out their nose and throat before visiting the doctor to be treated, thereby avoiding one source of contagion to the physician. The galleries for patients to recline upon out of doors are very extensive, and the walks are pretty and picturesque. The location is excellent, as it is well sheltered from the wind.

The next place I visited was Falkenstein, the home of Deitweiler, where I found a splendid institution, and was most pleasantly entertained by Drs. Koch and Besold, who extended to me every courtesy, showing me all over the building and grounds. The ventillation is excellent, and the sewerage is treated by precipitation, and used as a fertilizer. I was much pleased with the spacious galleries upon which patients recline the greater part of the day; also the kursals and small pavilions, which shelter from four to eight patients. These pavilions are built in the form of an arc of a circle, with sides and back, unobstructed in front to receive constant sunshine. Here patients repose all day except when they take exercise and go to their meals—using their rooms in the sanatorium for sleeping purposes only. These buildings, which are nothing more than sheds, are distinctive of Falkenstein, and I was so much impressed with the pavilions that I have ordered two of them built on the grounds of the Aiken Sanatorium. They were using Koch's "new tuberculin," both here and at the Hohenhonnef, but their experience with it has been of such short duration that they deemed it unwise to either praise or condemn it. They depend more upon keeping their patients in the fresh air, and nourishing them to the full amount of food that they will assimilate.

Dr. Besold insisted that I should see Ruppertshain, a sanatorium for charity patients situated about six miles from Falkenstein. The drive there was beautiful, and I spent two very agreeable hours with Dr. Nahn, physician in charge. Though not as luxurious as Falkenstein, everything was neat and well ap-

pointed, with every provision for the care and comfort of the patients.

From there I went to Görbersdorf, made famous by Dr. Brehmer, the pioneer of sanatorium treatment of phthisis. When he located in the mountains of Silesia, and started his sanatorium in a most modest way at Görbersdorf, it was not believed that it would be successful. So far from that, he gradually enlarged it until the new building erected before Dr. Brehmer's death is almost palatial. Here they take three classes of patients—the wealthy, those of moderate means, and the poor, for the accommodation of which separate buildings are provided. These classes do not conflict with each other in the slightest degree. There is a magnificent winter garden, stocked with palms and tropical trees, and a very artistic fountain in the centre. The reading room and the dining hall are both large and spacious. The grounds are the pride of Görbersdorf. In the immediate vicinity of the buildings are beautifully laid out flower beds, with fountains interspersed here and there. The walks are well made, and extend up the mountains in every direction to the various villas located on the grounds. Besides the ordinary douche rooms in the building, there is a pavilion for this purpose.

They were using "Koch's new tuberculin" in a limited number of cases, but were not at present ready to express an opinion concerning it. They had one room fitted up for inhaling the vapor from lignosulfit, in the centre of which was a small pine tree, over the branches of which continually dripped the lignosulfit. The patients sitting around the room from one half to two hours inhaled the balsamic vapor. The principal treatment consisted in nourishing food, fresh air and the douche, with the walk up the mountains, as prescribed by the physician. The sanatorium is now in charge of Dr. Rudolph Kolbert, with six assistant physicians.

Dr. Kolbert was most kind, and made every effort to show me everything of interest in the sanatorium and the management of his patients. I spent a day and night there as his guest, and had the pleasure of staying in Dr. Brehmer's private house. I was delighted with his library of works on tuberculosis and his private palm garden, which made one imagine upon entering that he had been transported into fairy land. Dr. Brehmer was such an enthusiast after knowledge which would aid him to thoroughly understand phthisis that he spared neither pains nor money to effect that end. As an example, I will mention that he built and fitted up an observatory at an expense of $20,000, so as to see if he could attribute the cause of hæmorrhage to any change in the barometric pressure or atmospheric conditions. After thoroughly experimenting he found that he could not.

The last sanatorium I visited of any note was Nordrach, under the care of Dr. Otto Walther. It is most beautifully situated in the heart of the black forest, eight miles from the railroad station of Biberach. I reached the sanatorium at dinner time and was most courteously entertained by Dr. Walther. His plan and management of his institution were more in accordance with my ideas than that of any I had visited, consequently I will describe it a little more in detail.

Dr. Walther does not believe in assistants, and therefore only receives the number of patients he can attend to himself. This number is limited to forty, and he sees each patient three times a day, and at that time prescribes the nourishment and exercise necessary for them until the next visit. He requires his patients to lie down an hour before each meal, claiming that we cannot expect to get the best work out of the stomach unless the system is rested. His houses in which patients sleep are each built to hold ten people—five rooms down stairs, and five rooms upstairs—all facing the sunny side, and have two windows. The hall runs behind the rooms, and opposite each door is a window, enabling free circulation of air throughout. In each room there is a douche, and this feature I was particularly well pleased with. His dining-room has windows on both sides; those on the leeward are always open, and as soon as the winter weather is over the window sashes are removed to increase the general ventilation. The mountains are covered with beautiful walks, which were laid out and planned by Dr. Walther himself. The Doctor treats his patients principally by rest, fresh air and nourishment, placing very little value upon the different specific remedies. He pays the greatest attention to the minutest detail in connection with his patients, and herein lies the secret of his success.

As regards the special symptoms:—The *cough*, unless it is hacking and disturbs the patient at night, I generally let alone, as it will improve and get less and less as the lungs heal; nearly all cough syrups impair the digestion. I prefer codeia to any other preparation of opium to arrest the cough.

Pulmonary hæmorrhages I do not believe should be treated with ergot or mineral acids, and I cannot say that I favor the ice bag. I think

far better results are reached by quieting the patient's nervous system with some preparation of opium, and depressing the circulation, for which I use aconite, and sometimes antipyrine.

Night sweats are apt to be most troublesome at times, and, being a symptom of weakness, will gradually disappear as the strength is regained. Aromatic sulphuric acid, oxide of zinc, agaracine, camphoric acid, belladonna, and atropia have all been strongly recommended, and are of use in cases of profuse sweating; but in mild cases I try to control it by giving nourishment in the night, such as milk or a mild astringent, as sage tea.

Gastric disturbances are best controlled by an exclusion of the starchy foods; creosote in small doses will act astonishingly well in a great many cases. The different digestives may be tried, as all have their virtue, but I have derived better results from a combination of dilute hydrochloric acid, papain, nux vomica, and gentian.

Diarrhœa is at times a most alarming symptom, and one that will tax our therapeutic knowledge to its utmost to control without disturbing the digestion. I have obtained the most satisfactory results from a combination of phenol of bismuth, subgallate of bismuth, and tannigen.

I would like to give you the history of a few cases treated at the Aiken Cottage Sanatorium last winter.

Case I.—Entered January 6th, young man, married, workman in shoe factory; weight, 150 pounds; pulse, 100; temperature, 99.5°; appetite, fair; digestion, good; cough, moderate; expectoration, ℥iss; night sweats, none; bacilli, yes. *Physical Examination—Percussion*—Left side dull from apex to third rib in front, and to the spine of the scapulæ behind; right side resonant. *Auscultation*—Left side, in front of third rib vocal fremitus, bronchial breathing, and the same behind to spine of the scapula; right side, vesicular.

This was a hæmorrhagic case; and though he had one slight hæmorrhage whilst with me, his condition when he left, April 22d, was—weight, 175 pounds; pulse, 80; temperature, 98.5°; appetite, good; digestion, good; cough, none; expectoration, none; night sweats, none; bacilli, none. On percussion, only slight dullness in upper part of left lung; and on auscultation, slight vocal fremitus and prolonged expiration in the upper part of left lung; rest of chest, normal. He has worked at his trade all summer, and expects to return to the sanatorium next month. I hope to send him home well in the spring.

Case II.—Entered January 6, 1897. Stenographer; young man, single. Weight, 124 pounds; pulse, 120; temperature, 102.5°; appetite, poor; digestion, poor; cough, excessive; expectoration, ℥jss; night sweats, yes; bacilli, yes. *Percussion*—On right side dull to mammary gland in front and lower part of scapular behind. Left side, diminished resonance, supraclavicular and suprascapular regions. *Auscultation*—Right, bronchophony and a few râles. Left, rough in supraclavicular region.

May 3.—Weight, 141 pounds; pulse, 90; temperature, 98.5°; appetite, good; digestion, good; cough, greatly improved; expectoration, ℥ss; night sweats, none; bacilli, only a few. *Percussion*—Right side, diminished resonance to second intercostal space in front, and to spine of scapular behind. Left side, resonance. *Auscultation*—Right side, vocal fremitus, and slight rough breathing; no râles. Left side, vesicular.

Case III.—Entered January 6th; young man, single, harness-maker. Weight, 123 pounds; pulse, 120; temperatuce, 99 5°; appetite, fair; digestion, good; cough, very little; expectoration, ℥jss; night sweats, none; bacilli, yes. *Percussion*—right side, diminished resonance in supraclavicular region; resonance over rest of lung. Left, dullness from apex to third rib in front and to spine of scapular behind. *Auscultation*—Right, vesicular. Left, bronchophony and some râles over the upper part of chest. Besides this, he had laryngeal tuberculosis.

April 10.—Weight, 137 pounds; pulse, 92; temperature, 98 5°; appetite, good; digestion, good; cough, very little; expectoration, ℥ss; night sweats, none; bacilli, yes. *Percussion* on the right and left side showed the chest to be about the same as it was in January. Upon *auscultation*, there were not quite so many râles. But the condition of the larynx remained about the same.

Case IV.—Entered January 12th; young man, single, school boy. Weight, 113 pounds; pulse, 84; temperature, 98.7°; appetite, good; digestion, good; cough, moderate; expectoration, very little; night sweats, none; bacilli, none. *Percussion*—Right side, diminished resonance, supraclavicular and clavicular region to second intercostal space in front and suprascapular region behind. Resonant over rest of lung. Left side resonant. *Auscultation*—Right side, some vocal fremitus in apex, both front and back. Left, vesicular.

May 4.—Weight, 131; pulse, 90; temperature, 9.85°; appetite, good; digestion good; cough, none; expectoration, none; night sweats,

none; bacilli, none. *Percussion*—Diminished resonance only in supraclavicular region of right side.

Case V.—Entered January 18th; young man, married, coachman. Weight, 144 pounds; pulse, 82; temperature, 98.5°; appetite, good; digestion, good; cough, moderate; expectoration, ʒj; night sweats, none; bacilli, yes. *Percussion*—Right side, diminished resonance, supraclavicular and suprascapular region. Resonance in rest of lung. Left, dull to third rib in front and to spine of scapulæ behind. *Auscultation*—Right lung vesicular except prolonged expiration in apex. Left, rough and vocal fremitus over upper part.

April 25.—Weight, 165 pounds; pulse, 90; temperature, 98.5°; appetite, good; digestion, good; cough, greatly improved; expectoration, ʒss; night sweats, none; bacilli, hardly any. *Percussion*—Right lung resonant. Left, dull in supraclavicular and clavicular region, diminished resonance in infraclavicular region. Suprascapular, dull; diminished resonance in upper part of scapula. *Auscultation*—Right lung, vesicular; left, bronchophony in upper portion, vesicular in lower.

Case VI.—Entered January 25; young man, single, worker in rubber factory. Weight, 148 pounds; pulse, 66; temperature, 98.6°; appetite, good; digestion, good; cough, moderate; expectoration, ʒj; night sweats, yes; bacilli, yes. *Percussion*—Right side, dull to second rib in front and to spine of scapular behind. Left, resonant. *Auscultation*—Right, some vocal fremitus and rough breathing. Left, vesicular.

April 19.—Weight, 148 pounds; pulse, 76; temperature, 100°; appetite, fair; digestion, fair; cough, about same; expectoration, ʒj; night sweats, yes; bacilli, yes. *Percussion*—Right, dull to third rib in front and to spine of scapula behind. Left, diminished resonance in supraclavicular region. *Auscultation*—Right, vocal fremitus and some râles in upper part; lower part, vesicular. Left, rough breathing at apex, vesicular over rest of lung.

Case VII.—Entered January 27, 1897; young man, married, hotel clerk. Weight, 127½ pounds; pulse, 96; temperature, 98.8°; appetite, poor; digestion, poor; cough, moderate; expectoration, ʒss; night sweats, none; bacilli, none. *Percussion*—Right side, diminished resonance in supraclavicular and suprascapular region. Left, dull to third rib in front and dull to below spine of the scapulæ behind. *Auscultation*—Right, rough breathing in apex, vesicular over rest of lung. Left, mucus click and vocal fremitus in upper part, both front and back. Vesicular in lower part.

April 10.—Weight, 140 pounds; pulse, 84; temperature, 98.5°; appetite, good; digestion, good; cough, hardly any; expectoration, ʒiss; night sweats, none; bacilli, only a few. *Percussion*—Right, resonant; left, dull to second rib in front. *Auscultation*—Right, vesicular; left, slight vocal fremitus and rough breathing in front.

In reviewing these cases, you will see that five improved very much, one remained *in statuo quo*, and one grew worse. The one that grew worse was one of the most promising patients when he entered, and I can only account for his not improving by his having so morbid a disposition.

THE HYPODERMIC SYRINGE AND ITS USE IN MALARIA.*

By KENNON DUNHAM, M. D., Cincinnati, Ohio.

The use of the hypodermic as a form of medication is being extended daily. Its great advantage lies in its exactness and its rapidity. The resulting abscess and the pain have been the greatest drawbacks. If any one will use proper aseptic and antiseptic precautions, and carefully selected drugs, there need be no abscess.

Its use frequently relieves the stomach to a most wonderful extent, and enables us to give proper nourishment, which is of the utmost importance. Our forefathers neglected this, and often prevented a cure by their medicines. To day pharmacology has reached so high a standard that nauseating drugs are rarely necessary. Yet our prescriptions often take away the appetite. Where it is possible to employ the hypodermic, the stomach is relieved (with a few exceptions, as apomorphia), and we can feed the system as well as medicate

It seems to me that the syringe will be used much more in the future than it has been in the past. But I wish to call your attention to its advantages in *malaria*.

Malaria is a disease from which the Mississippi Valley has suffered throughout its medical history Many theories of its etiology have been advanced, and a bacillus carefully described, but Lavaran, a French army surgeon, while working in Algiers, was the first to recognize the parasite in the blood, and to believe in its relation to malaria. Lavaran had a long and heated discussion with several Italian observers, which led to much bitter feeling.

* Read before the Mississippi Valley Medical Association, Louisville, Ky., October 5-8, 1897.

For a long time Marchiafava and Binami constantly refused to see the parasite, although Lavaran made a trip to Rome to show it to them.

They were contending for the bacillus of malaria. Later their own investigations proved to themselves that the parasite was the cause of the disease; but even to this day, they have never acknowledged the work of Lavaran as amounting to anything, and have never owned that he was right; but have described it as if it were new, from their own pens. Their work is of the best, and their researches have advanced far ahead of anything Lavaran has given us.

To-day we recognize three forms of malaria —tertian, quartan, and æstivo-autumnal.

The life history of the tertian and quartan parasite has been thoroughly studied, but that of æstivo-autumnal is still in doubt. It may be that later we will find more than one variety of parasite under this division.

Malaria is undoubtedly caused by a parasite in the blood, and it is only by the extermination of this parasite that we may hope to bring about a cure of malaria. When the parasite is seen, we know at least that part of the trouble is due to malaria. Thus the uncertainty of the diagnosis exists no longer, the doctor ceases to worry as to whether or not he is right, and the quinine is increased until a cure is effected.

The question arises as to what time in the life of the plasmodium quinine can do its best work. One would suppose that the younger forms would be the more delicate. So it is, and we find that if the quinine is in the blood at the time of segmentation, it has a much more deadly effect upon the disease than if there at any other time. Segmentation occurs at the time of the chill or just before, and can be predicted by the microscope. The chill is, in all probability, caused by some toxic property, which is liberated at the time of segmentation. In predicting the chill, you can judge approximately of the time of segmentation. When you realize that the life history of a tertian parasite is about forty-eight hours, and that of the quartan is about seventy-two hours, you can see that this prediction presents no great difficulty; but with the æstivo-autumnal we have an uncertain life history, and cannot be so accurate.

Some cases seem to get well without medicine; others only need the assistance of a little quinine; while others produce death in spite of very large doses of quinine. There are a few systems which cannot tolerate quinine, to one of which I shall call your attention. It is in very liable to occur, and you are not safely out severe cases which do not tolerate large doses of quinine, and cases in which very rapid control of the disease is desired that I recommend and urge the use of the hypodermic syringe.

The form of quinine which I now use is the hydrochloro sulphate of quinine. It has given the best results, and has the least drawbacks. It is soluble in equal parts of water. It has the strength of the bisulphate, and is decidedly the least painful of all the quinia salts which I have tried. The hydrochlorate with urea is also soluble in equal parts of water, but is much more painful. It is usually used in 50 per cent. solution, and the pain frequently lasts for an hour, while the double salts is easily tolerated even by very nervous patients.

I have always made the injection into the deep muscles of the gluteal region. It is best to wash the part with a 1:20 solution of carbolic acid, as that renders the surface antiseptic and numbs the sensitive nerves.

After a careful study of twenty one cases, it was found that by giving small doses of quinine, five grains four hours before the suspected and predicted paroxysm, and another five-grain dose four hours after or at the time of the paroxysm, the disease could often be checked at once and cured in a few days. Yet it is not always possible to thus so easily control the disease, and I believe that it is much easier to get control in a place like Cincinnati than in a typical malarial district. Even in Cincinnati, we are often compelled to use larger doses, and at times to resort to the hypodermic. Hypodermic injections were given daily, six-grain doses of the hydrochloro-sulphate of quinia being used. The bisulphate was used twice, and only 4½ grains injected. It worked very well, but was painful. (I have had Werner and Simonson, of Cincinnati, make hypodermic tablets of the hydrochloro sulphate. These are readily soluble, and are easily preserved.)

In places where there is much more malaria than in Cincinnati, and where there are oftener fatal cases from this cause (I have seen only one fatal case in Cincinnati), I believe that the hypodermic could be used to the utmost advantage. One great danger lies in the fact that you are liable either to be condemn d for treating the patient unnecessarily, or you lose sight of your patient, to have a relapse follow.

It is seen that the æstivo autumnal is the most persistent. I should advise, in treating this form of the disease, that little time be wasted with any form of medication, except the hypodermic, and that this be pushed relentlessly. Also the best hygienic surroundings should be given such cases. A relapse is of the woods for many weeks.

TREATMENT OF FLEXION DEFORMITIES OF THE KNEE-JOINT.*

By A. R. SHANDS, M. D., Washington, D. C.

It is not the intention of the writer to confine his remarks to what would come within the scope of his paper as it appears on the programme for this meeting of the Medical Society of Virginia; this title was sent to our honorable President many weeks before the paper was written, but it is his purpose to speak of the prevention as well as the correction of knee deformities confined to that most common deformity—flexion of the knee—complicating tubercular disease of the knee-joint, either of the soft or bony structures, or both; and in doing this, it has been decided that a few remarks regarding the clinical history of this most formidable disease would not be amiss.

I would like to call your attention to the fact, that it is a very prevalent idea to associate orthopedic surgery only with correcting deformities, and that usually by mechanical means. Any one who will look up the etymology of the term will find that it means prevention as well as correction of deformities.

Gross errors in the diagnosis of troubles about the knee-joint should not be made, for a thorough examination of the joint is so easily made —how different from the hip and spinal joints. It is a matter of little importance to the orthopedist whether a "tumor albus" begins as a synovitis or an osteitis; the outcome is practically the same and the treatment similar. The trouble may end in a natural cure with fibrous or bony union with a distorted limb, or such an extensive suppuration may follow as to endanger life from sepsis or amyloid changes.

An early diagnosis and efficient treatment are most desirable in these cases. The objective symptoms of tubercular disease of the knee-joint are usually so pronounced that an early diagnosis should be made in almost every case by one who has given any special attention to joint diseases. In spite of this assertion, I have seen cases that have been treated for articular rheumatism until suppuration is well advanced. The chief symptoms to be relied upon are local heat, swelling, muscular spasm, reflex atrophy of the muscles both above and below the joint, and tenderness; this is about the order of their importance. Comparison of the diseased joint with its fellow is very valuable assistance. In measuring the lengths of the limbs it should be borne in mind when the disease is well advanced that the diseased one, as a rule, will be found to be longer, varying from one-quarter to three-quarters of an inch; this is not the case in hip diseases. This is due to an overgrowth being produced in the cancellous bone of ends of femur by the hyperæmia occasioned by the inflammation. Do not take much stock in the history of some traumatism that the parents are always aware that the child has sustained. I have yet to see a case of tumor albus in which there was not a history of a fall or injury of some kind. Upon close questioning, you will generally find out that the child was a little lame before the injury was received, and there hangs the true story. The disease is generally responsible for the fall to which so much importance is attached by the parents; the inception of the disease is so insidious, causing unsteadiness of the limbs, that it should give the fall its proper place in the history of the case.

It should be borne in mind that pain is not often a prominent symptom in the early stage of the disease; the diagnosis should be made long before this is developed. Heat of the affected joint is present from the beginning of the trouble, and is an important index to the progress of the disease; if the joint is kept perfectly quiet it will disappear to return at once if anything goes wrong; it should serve as an urgent indication for protective treatment as long as it exists in any degree. Lameness is an important symptom, and will vary according to amount of flexion present. Muscular fixation, nature's effort to immobilize the joint, is a prominent feature from the first; there may be a small arc of painless motion, but it will be checked by muscular spasm just as soon as the limit is reached. Muscular spasm is much more prominent in an osteitis than in a synovitis.

The flexors of the knee being so much stronger than the extensors, the limb soon becomes flexed, and if the muscular spasm is unchecked this deformity increases until the limit of flexion is reached. When the flexion reaches a right angle there is great danger of subluxation of the tibia, due to the shape of the joint surfaces and the constant pulling backwards of the strong hamstring muscles.

Without going minutely into the details of the differential diagnosis, I shall content myself with these few diagnostic hints and proceed at once to the management of a case of tumor albus, first, with a view to the prevention of deformity, and secondly, to the correction, although it is very tempting to go into the general treatment of the disease, but that

*Read before the Twenty-eighth Annual Session of the Medical Society of Virginia, at Hot Springs, Va., September 2nd, 1897.

would necessitate a paper too lengthy for an occasion of this sort.

The fact that there is a tendency for the tuberculous foci to be multiple prevents one from taking very radical surgical measures to remove the diseased areas. If we could feel sure that a single focus of disease existed and we could locate it, it could easily be removed and thereby end the process in its incipiency, but the signs that apply to a single focus would also apply with equal force to two or more foci; hence one prefers to adopt more conservative measures in the early stage. In my practice I rely upon immobilization and rest as the best means of bringing about resolution. For the purpose of producing perfect rest and immobilization I know of nothing better than the plaster-of-Paris bandage, when properly applied; but this is a dressing that is much abused, and without one is somewhat skillful in applying it, disappointment in results is sure to follow. It is desired to emphasize the point that the plaster is to be so applied as to produce absolute immobilization. I have had opportunities of removing plaster casts from knees that did not immobilize the joints, but were freely movable up and down and admitting of several degrees of flexion under the dressing. Fortunately, the dressing that most favors resolution is also the one that will best prevent deformity, and if one realizes fully the severity of the diseases with which he has to contend, he will not only adopt the dressing that will best meet the exigencies of the case, but will hold himself responsible for the maintenance of the splint or dressing in the position to prevent the deformity.

I would like to say a word here about the very prevalent opinion among many who have not had an extensive experience in the treatment of chronic joint diseases that immobilization will produce ankylosis. It is a great mistake to think such is the case. My experiences in the treatment of these cases is, that the real function of the joint can be better preserved by absolute immobilization than by any attempts of passive motion in a joint that is in a high state of inflammation. Verneuil has said that this fear has led many to do very bad surgery. He calls it "ankylophobia," and asserts that not a single case has ever been offered to prove that such a thing has been produced. I am fully convinced that ankylosis is produced by the products of inflammation and suppuration; therefore, anything that will check these processes will limit the ankylosis.

Before taking up the subject of correction of deformity of the knee, I would like to insist upon the rule, "prevent deformity;" and in doing this, rest assured that you are using the best means of preserving the functions of the joint, aiding resolution and thereby hastening the cure.

For sake of convenience of description, I will divide the flexion deformity almost always present in tumor albus into three classes:

First. Flexion due to contracture of the hamstring tendons.

Second. Flexion due to contraction of the hamstring tendons with adhesions of the articular surfaces.

Third. Flexion due to contraction of the tendons and firm fibrous adhesions with bony ankylosis.

"*Treatment of Stage Deformity.*"—For many reasons it is rare that the orthopedist sees a case of tumor albus during the early stage; it is generally when the deformity is well established that he is consulted. The problem how to correct the deformity is often a perplexing one, and if you can assure the patients that it can be done by any means short of operative surgery, you will at once gain their confidence and very probably secure the patient. The splints that have been devised for this purpose are very numerous; many are very complicated, and have not given satisfactory results except in hands of those who have devised them. I have tried nearly all of them, and have been more or less disappointed in all except two—viz: the Billroth splints to overcome the deformity, and the Thomas splint as an ambulatory apparatus, which also serves the purpose of preventing the deformity.

First Stage.—In the early stage of tumor albus, the flexion deformity is almost always accompanied with much swelling due to infiltration of the peri-articular structure. Before attempting to overcome any of the deformity, I always get rid of as much of the swelling as possible, which is accomplished by compression and fixation. Compression is gotten by strapping the joint with strips of rubber adhesive plaster, about half an inch wide, beginning about five inches below the patella, applying them diagonally around the limb in a criss-cross arrangement, extending it about five inches above the patella. These straps should be put on just as tightly as possible; over this is applied a gauze bandage, extended well up the thigh and down the calf. A snugly-applied plaster of-Paris case completes the dressing. No attempt to correct any deformity should be made at first sitting. The dressing should be allowed to remain on for a week or ten days, and if the flexion is due to tendinous contractures,

at end of that time, upon removal of the dressings, the deformity will be easily corrected with gentle manual pressure. If all of the deformity cannot be reduced without force, the same dressing should be re-applied with the limb in its improved position. In all probability, at end of another week or ten days the muscular spasm will have subsided sufficiently to allow the limb to be brought into a straight position without force. When the limb is straight, a Thomas splint should be applied and child allowed to walk. Just as long as there is any pain, spasm or swelling of the joint, the local dressings above described should be kept on in addition to the walking apparatus; the latter should be used just as long as, in your judgment, there is any danger of return of any acute symptoms. No definite time can be laid down for discontinuing the use of the brace; one will have to use his own judgment in each case. I never use crutches in children if I can possibly help it, for they do not afford proper protection to the joint even when plaster-of Paris is used. When the pain and spasm subside, the child will surely bear weight on the limb in locomotion; besides, they render the child more liable to falls and tumbles. The brace bears all the weight as a peroneal crutch. Be very cautious in discarding the brace when in your judgment the time has come to discontinue its use; remove all of the dressings and let patient use limb continuously for a week, and if the range of motion has increased in that time, it may be safe to discard it.

Second Stage.—When the flexion deformity is due to contraction of the hamstring tendon —that is, actual shortening—and fibrous adhesions a result of the reparative processes of nature, more radical measure will have to be adopted. For the correction of flexion due to this state of affairs, I have gotten such excellent results from the use of the Billroth splint that I use it almost to the exclusion of everything else. During my term of service as interne in the Hospital for Ruptured and Crippled, New York, this splint was used very extensively; in fact, in almost every case in which there was not very firm fibrous adhesions or bony ankylosis.

This splint is very similar to the sector splint that is used for the same purpose, and has the advantage of being a very cheap apparatus and is very simple. It consists of two fan-shaped tin strips joined by light steel bars, which are joined by a slot and screw. The splint is applied as follows: Fit the tin strips to the limb before applying them; shape the steel bars over the prominence of the knee, having the joints opposite the knee joint. Protect the bony prominence with pieces of doubled faced canton flannel, or piano felting. First apply a canton flannel bandage from upper third of the thigh to the lower third of the leg, and over this apply plaster-of-Paris bandages, incorporating the splints in the plaster in the position in which they have been previously fitted. The plaster should be at least a half inch thick in the popliteal space; before the plaster is thoroughly hardened, with a sharp knife make a transverse incision through the plaster, filling the popliteal space. This incision should be continued across the anterior aspect of the knee, above and below the patella, and the plaster between the anterior incisions should be removed; this makes the plaster case in two sections joined by the splints. The next day the leg can be extended to the pain limit, and by inserting a wedge-shaped piece of cork in the posterior incision, the improved condition can be retained. Every few days (every day if not very painful), this stretching process should be repeated, retaining what is gained at each sitting with a piece of cork.

If, after correcting the flexion, there is any knock knee present, that can be corrected with the same splints by placing them on the anterior and posterior aspects of the knee and making the incision on the outside for the piece of cork.

It is surprising to see what can be done with these splints. With patience and perseverance, knees can be straightened in this manner that at first sight would appear to be suitable only for the knife and anæsthetic. After the deformity is corrected, the same preventive treatment is applicable here that was described above.

If these measures are faithfully carried out, there will be but few cases left for operative measures.

Third Stage.—In this class of cases, I would include those cases that are held in a flexed position by firm fibrous and bony ankylosis. This condition of affairs is seen most often after most of the acute manifestations of the disease have subsided—limb being left ankylosed in a distorted position. These are the cases in which only operative measures offer any hope of correcting the deformity; resection of the joint is here indicated, and in properly-selected cases, most excellent results can be obtained. One should hesitate, however, to adopt such radical measures if there is any indication that there is any active process of the tubercular osteitis present without he is sure

of removing all of the foci of the disease. In such cases, it is much better to postpone the operation until the disease has entirely subsided, if he is contemplating the operation for the correction of the deformity only.

I have no particular operation to advocate, for I have done almost a different operation on every knee I have resected.

A recurrence of deformity, either flexion or knock-knee, is almost sure to occur in resected knees in children, if the knee is left unprotected. A stiff leather knee-splint, with laces, is a very efficient convalescent splint for these cases, and should be worn for several years. The ambulatory brace is not necessary in this class of cases; patient can be allowed to use crutches until he becomes accustomed to walk on the limb, which is usually done in three or four months.

In cases where flexion is due to fibrous adhesions, admitting of a few degrees of passive motion, it is a common practice with some surgeons to break up these adhesions by "redressement forcé," under an anæsthetic; but, in doing this, two points of greatest importance should be borne in mind—viz: 1st. You should be sure that a sufficient length of time has elapsed since the subsidence of the acute symptoms to insure you there is no danger of relighting the old disease by breaking down these old adhesions; and, second, that there is great danger of injuring the popliteal vessels and nerves by too rapid straightening the joint that has been in a flexed position for years. In adopting these means of correcting flexion, great care should be exercised not to use too much force, or attempt to correct much of the deformity at any one sitting; better do it at several sittings.

It is also best to divide the hamstring tendons subcutaneously at first sitting. I have recently had the opportunity of seeing a very disastrous result from this method of treatment—patient was a young adult with a flexed knee, which was corrected by "redressement forcé;" result was gangrene of leg, which had to be amputated above the knee.

In many of these old cases, the flexion deformity is complicated with subluxation of the tibia—that is, the head of tibia will be in the posterior inter-condyloid space, and out of the normal vertical plane. It is almost impossible to correct the subluxation even when the flexion can be overcome by manual force. This is due to two causes—viz: fibrous adhesions and enlargement of the femoral condyles —result of the old osteitis of their cancellous structure. This condition should be regarded as one indication for resection of the joint.

Many braces have been devised to correct subluxation of the tibia, but it has not been my good fortune to see any very brilliant results follow their use, except in cases where the fibrous adhesions were slight and condyles not enlarged.

To better illustrate a resection of the knee, I will here report a case that I recently operated on:

Wm. Bell, age 10. Admitted to orthopædic service of the Emergency Hospital and Central Dispensary, Washington, D. C., April 27, 1897.

Diagnosis.—Old tubercular osteitis of right knee with flexion and subluxation of tibia.

Date of inception of disease.—Summer of 1893.

Present condition.—General condition of patient excellent. Atrophy of right lower limb marked; numerous cicatrices all around the knee, especially prominent on external aspect. No sinuses or other evidence of any active process of disease. Leg flexed to right angle on the thigh, tibia subluxated, about five or six degrees of passive motion, but voluntary motion "nil." No pain or tenderness on manipulating the limb. Length of limbs equal.

Family history, negative; personal history unsatisfactory, on account of ignorance of mother, who says that her boy hurt his knee with an axe in summer four years ago. Abscesses formed at different times, which were either incised or opened spontaneously. Mother says that he had running sores for about two years, during which time he was in bed.

Patient was from one of the rural districts of Virginia, and had no professional attention. This is evidently one of Nature's cures, who surely has treated him very well in every way except using means of preventing deformity.

April 30th.—Under ether anæsthesia, I divided subcutaneously the hamstring tendons, and made an attempt to correct some of the deformity by gentle manual pressure, but with little success, as the adhesions were very firm. It was impossible to overcome the subluxation in the slightest degree, on account of the projecting and enlarged condyles; hence a resection was decided on.

May 8th.—With the able assistance of Dr. Wallace Johnson, I resected the joint in the following manner: A transverse incision was made across the patella, which was divided with a saw, my object being to reunite it in closing the wound. Upon opening the joint, the patella, ligaments, and capsule, were included in one mass of fibrous adhesions. After exposing the head of the tibia and condyles of the femur, the tips of the condyles were sawed off, which revealed a cavity in each,

easily admitting the end of my index finger. These cavities were filled with a harmless looking gelatinous mass; no pus was found anywhere. These cavities were walled off with a very hard bone. To be sure of removing all unhealthy bone, I sawed another section above the cavities. A thin section was then sawed off the tibia, and that revealed a spot of diseased looking bone, which was scraped out. The limb was then easily brought into position.

The femur and tibia were fastened together with kangaroo tendon, fragments of patella removed, and wound closed and limb put up in plaster-of-Paris spica, which was extended from the toes to the nipples.

On the third day, boy's temperature reached 101 degrees; after remaining at that point for three days, it gradually dropped to normal, where it practically remained during convalescence, which was uninterrupted in every respect. The first night after the operation, the patient had one hypodermic of morphia; after this, an occasional dose of Epsom salts was all of the medicine he had. After the second day, he never complained of pain; this, I am sure, was due to the fact that the limb was absolutely immobilized by the plaster-of-Paris spica. At end of five weeks, the dressings were removed, and, as firm bony union was found to exist, a short plaster case was applied. I shall cause the patient to wear a convalescent splint on this knee for at least two years—that is, if I can keep track of him. At the present time, four months after operation, the boy walks very well with a shoe with cork sole three-fourths of an inch thick.

It was the intention of the writer to include in this paper a report in detail of a number of flexed knees, corrected by the Billroth splints, but as the paper has already reached a length that was not anticipated, that report will have to be omitted.

In conclusion, I would say that if these tubercular knees are properly treated from the beginning—*i.e.*, by *rest* and *fixation* in a straight position, there will not be need of any operative procedure to correct deformities.

Tartarlithine Cures Chronic Rheumatism.

Dr. J. G. Denelsbeck, Spotswood, N. J., in writing Messrs. McKesson & Robbins to send more bottles of *Tartarlithine Tablets*, states that "this is the most welcome remedy that has come into my hands since beginning the practice of medicine. It has given me, in every case in which I have used it, the happiest kind of results."

COCAINE IN SURGERY.*

By J. SHELTON HORSLEY, M. D. New York, N. Y.

Among the many revolutionary innovations introduced in the domain of surgery during the past few decades, but few have attracted more attention than local anesthesia. And when we consider the numerous and eminently practical uses to which it is applicable, we can readily understand why this is true and why the announcement in September, 1884, that Dr. Karl Koller, then of Vienna, had thoroughly demonstrated that complete anesthesia of the cornea, conjunctiva, or mucous membrane of the tongue could be obtained by the local application of cocaine, caused such widespread interest in the surgical profession. There are patients who dread general anesthesia as they would dread death, and the discovery that complete abolition of sensations in the parts operated on could be induced without loss of consciousness and without deleterious effects, was at once recognized as a great progression in progressive science.

Though Koller is justly credited with the discovery of cocaine, history repeats itself in this as in all other important discoveries; for the anesthetic property of cocaine and of the leaves of erythroxylon coca was evidently known before 1884. The leaf of the erythroxylon coca has been chewed by the natives of South America from the earliest times. The plant was first treated of botanically by Monardes in 1569, and afterwards by Clusius in 1605. The first specimen was sent to Europe by Jussieu in 1750, and was named by him. The alkaloid was called *erythroxyline* by Gadecke, who first discovered it, though Niemann, of Goslar, in 1860, gave it the present name of *cocaine*.

For cocaine anesthesia of the integument and deeper tissues, either hypodermically or by cataphoresis, we are, perhaps, more indebted to Dr. J. Leonard Corning, of New York city, than to all others. The surgical use of cocaine is better understood now than ever before. The danger from its constitutional effects when employed locally, was at first underrated and its usefulness overestimated; then the danger was exaggerated, and now it seems the pendulum has settled at a happy medium.

Just here it might be of interest to consider very briefly the rivals of cocaine in the field of local anesthesia. Refrigerants, as sprays of ether, ethyl chloride, etc., are usually difficult

* Read before the Twenty-eighth Annual Session of the Medical Society of Virginia, at Hot Springs, Va., September, 2, 1897.

of application, followed by pain after the operation, and cannot be used with any measure of success except on extremities where the circulation can be controlled. They are sometimes of use in opening boils and in other operations on the skin. *Eucaine* has recently sprung up, and is being pushed with all the energy of an enterprising manufacturing chemist. The chief advantage claimed for it is safety, but this is a much mooted point.

In an article in the New York *Medical Times* of May, 1897, the conclusion is reached that because an injection of two drachms of a 4 per cent. solution of cocaine produced a fatal result, cocaine is dangerous, and should be abandoned! But the maximum dose for hypodermic injection, as usually given, is one grain, and in this case five grains were injected. It would be equally as reasonable to abandon the use of common salt, because a "dose" of half a pound taken at once would probably kill. Besides, it has been definitely ascertained that eucaine produces local hyperemia, so bringing an excessive amount of blood in the operative field which is a distinct detraction. Cocaine has just the opposite effect. Recent investigations go to show that eucaine is really the more dangerous of the two drugs; for, while in cocaine poisoning there are premonitory symptoms, eucaine, on the contrary, overwhelms the patient almost at once. As for keeping a solution of cocaine free from fungus, this can be readily done by dissolving it in a saturated solution of boric acid, which will remain sterile indefinitely.

The only real superiority of eucaine over cocaine occurs in ophthalmic work, and lies in the fact that while it produces anesthesia on being applied to the conjunctiva, it does not produce mydriasis and disturbance of accommodation as cocaine does. But, in the light of recent investigations by Reclus and by Pouchet, eucaine cannot be said to be superior in any other way to cocaine, while in many things it is decidedly inferior, if the latter drug be intelligently used.

In order to test their comparative anesthetic effects, I had five minims of a solution of both drugs injected by Dr. J. C. Anderson, of New York, into corresponding areas of the flexor surfaces of my forearms. From notes taken at the time, I find the following items:

A 5 per cent. aqueous solution of *eucaine* was injected just underneath the skin in the left forearm and an equal amount of 4 per cent. *cocaine* solution injected in a similar manner in the right forearm. The eucaine solution produced considerable burning pain, which lasted about twenty seconds; there was no pain after the cocaine solution was injected. In a little over one minute, anesthesia was complete over the eucaine area; in two minutes, over the cocaine area, though partial anesthesia existed from the moment of injection. A slight incision of an eighth of an inch was made over each place just through the skin, the incision where the eucaine was injected bleeding much more freely than where cocaine was employed. In thirty minutes, sensation over the eucaine area was normal; in thirty-five minutes, over the cocaine area; though anesthesia had been only partial in both places for several minutes previously.

A great many major operations have been performed under cocaine—laparotomies, amputations at the thigh, etc., but in attempting these, the personal equation must receive due prominence. Other things being equal, a nervous, timid individual may require general anesthesia for an operation which could be readily performed on a more phlegmatic person under cocaine. Idiosyncrasy for cocaine is a most uncertain factor, and until it can be eliminated in each case, the alkaloid should be employed with great caution. A history of its previous use on the same patient is the only thing of value in foretelling this idiosyncrasy, as it may occur in any class of patients—the strong and muscular, the weak and nervous, being equally liable. Usually, there need be but little danger, if a weak solution or small quantities are employed until the tolerance of the individual be established. Toxic symptoms are marked loquacity, tingling sensations in the extremities, pallor, cold perspiration, shallow respiration, rapid, feeble pulse, sometimes vomiting, unconsciousness and convulsions. These, if mild, may resemble the symptoms of slight shock, with which cocaine poisoning is frequently confounded.

The treatment of value above all other is morphine. It should be given hypodermically, alone or with atropine, in a dose of one-fourth grain. *Morphine is by far the best physiological antidote for cocaine we have.* The next best are hypodermic injections of strychnia, ether, or whiskey. The head should be lowered, the body kept warm, and artificial respiration employed if necessary. In fatal cases, the respiration fails before the heart.

The methods of using cocaine in surgery may practically be divided into three: (1) by local application; (2) by hypodermic injection; and (3) by the galvanic current.

1. *In the local application*, we must consider the parts to which the cocaine is applied.

Cocaine is not absorbed through the unbroken skin, but from mucous surfaces, the eye, or where the skin is broken. Dropped in the eye, it is very rapidly absorbed; from mucous membranes, more slowly; and from the mucous membrane of the mouth and nares, more rapidly than from that of the urethra. The mucosa of the bladder absorbs this alkaloid very slowly. It is better to apply to a localized area a strong solution of cocaine (ten to fifteen per cent.) on a sponge or piece of cotton, than to spray it with a weaker solution (four per cent.) Granulating wounds absorb cocaine solution very imperfectly if the granulations are intact, more rapidly if they are broken, or if the solution is accompanied by pressure. As both of these conditions obtain in using cocaine for passing sounds to keep dilated a stricture of the urethra which has been recently cut, especial care should be taken to use a much weaker (two per cent.) solution than at the original operation. In cutting strictures of the urethra, an eight per cent. solution should be injected with an ordinary glass syringe, and retained by compressing the meatus for five minutes, or a four per cent. solution may be held in ten minutes. Within the bladder a large quantity of a strong solution may be safely used, if no abrasion already exists in this organ. A fresh wound that is not bleeding absorbs cocaine very rapidly, but if hæmorrhage is going on the blood washes away the alkaloid, and so prevents it being taken up by the fluids of the tissues All surfaces to which cocaine is to be applied should first be cleansed with a boric acid solution, as this not only renders the operative field antiseptic, but, by partially filling the lymphatics, prevents in a degree the excessive absorption of the cocaine solution.

2. *Hypodermic injections of cocaine* must be used most carefully. As a rule, a much greater quantity and a much stronger solution of this drug is employed than is necessary. If injected correctly, three minims should enable the operator to make a skin incision of three inches without any pain whatever. A very fine needle, preferably Green's, should be used, with a two or four per cent. solution of hydrochlorate of cocaine in a saturated solution of boric acid. The needle should be inserted just beneath the skin and about half a minim injected, which produces a white ischemic spot. After waiting a few seconds, its direction should be changed so it becomes parallel with the surface operated upon. The needle is now shoved along in the deeper layers of the skin for a half inch, and half a minim again injected; shoved another half inch, where another half minim is injected. Then the needle may be withdrawn and reinserted at the point of the last injection, and pushed along as before. This should take about one minute, and as soon as the hypodermic needle is withdrawn for the last time, the incision should be made without delay. After getting through the skin, which is by far the most sensitive area, Schleich's solution may be used with perfect satisfaction; indeed, the strong solution may be employed as above in entering the skin, only it is essential that the needle be shoved in the *substance of the integument*, as otherwise the anesthetic effect will not be prompt. This solution is made in three strengths, called respectively the "strong," "normal," and "weak," and it will be seen that the strong only contains in three and a half ounces three grains of cocaine, and all of them contain morphine, which counteracts the toxic effect of cocaine, and serves to increase the anesthetic effect. Professor John A. Wyeth has modified the orignal Schleich formula, substituting boric acid for carbolic acid, as the latter causes considerable burning for a few seconds after it is injected, although it may be used if preferred. The formulæ are:

STRONG.

Cocaine hydrochlorate	grs. iij
Morphine sulphate	gr. $\frac{1}{3}$
Sodium chloride	grs. iij
Saturated boric acid solution	℥iiiss
(or water, ℥iiiss, and carbolic acid, m. $\frac{1}{10}$)	

NORMAL.

Cocaine hydrochlorate	gr. iss
Morphine sulphate	gr. $\frac{1}{3}$
Sodium chloride	grs. iij
Saturated boric acid solution	℥iiiss
(or water, ℥iiiss, carbolic acid, $\frac{1}{10}$ m.)	

WEAK.

Cocaine hydrochlorate	gr. $\frac{1}{6}$
Morphine sulphate	gr. $\frac{1}{12}$
Sodium chloride	grs. iij
Saturated boric acid solution	℥iiiss
(or water, ℥iiiss, carbolic acid, m. $\frac{1}{10}$)	

When this is first injected in the substance of the skin it forms a white anesthetic wheal, from the edge of which another injection may be made. Practically, the strong and the normal are the only strengths used, and will be found particularly safe.

3. *By the galvanic current.*—This method was first attempted in America by Dr. J. Leonard Corning. The method he now uses is as follows: He first perforates the region to be anesthetized with a large number of very fine

needles, that are released by a spring after the manner of the old fashioned spring lancet. The needles should be so small that when withdrawn their punctures will be invisible to the naked eye. This perforated area is now covered with several thicknesses of flannel cloth, saturated in a five per cent. aqueous solution of cocaine hydrochlorate; a layer of potter's clay about the consistence of bread-dough, and containing a thin copper sheet, is placed on the flannel, and the copper connected by an insulated wire with the positive pole of a galvanic battery. The negative pole should consist of a broad, flat sponge, wrung out of warm water, and held as near the positive pole as possible without actually touching it. The larger the area to be anesthetized the stronger should be the current, and the longer it should be applied. Weaker currents should be used about the head and face than on other parts of the body. Generally speaking, from three to eight cells may be used, beginning at the smaller number and gradually increasing, and the time of application may be from ten to twenty minutes to obtain complete anesthesia.

If cocaine be intelligently used in properly selected operations, and according to the plans I have just attempted to describe, it will prove to be practically without danger and an almost ideal local anesthetic.

RELATIONS AND TREATMENT OF HAY FEVER AND CORYZA.*

By SETH SCOTT BISHOP, M. D., LL. D., Chicago.

It has been demonstrated repeatedly that sufferers from hay fever are subjects of uric acidæmia. By urinalysis I have found the proportion of uric acid to urea excreted as high as 1 to 23 in some cases, while the normal relation is about 1 to 33. In other instances, the excessive proportion of uric acid is less, but marked. Treatment of such cases with those remedies that eliminate the acid from the blood relieves and prevents the suffering. So we have the proofs of both chemistry and experimental therapeutics that an excessive proportion of uric acid in the blood bears a causative relation to hay fever.

It is by no means contended that uric acidæmia is the sole cause of this disease, but it is an exceedingly important factor that must not be overlooked if the disease is to be conquered. In 1893, the author proposed the uric acid theory of hay fever in a paper on the subject at the meeting of the American Medical Association. Since then further studies and experiments have not only confirmed the propositions laid down at that time, but have appeared to substantiate a causative relation between uric acidæmia and coryza, a condition correlative to hay fever.

Hay fever and coryza are not identical diseases. Hay fever is not an inflammatory disease, while coryza, or acute rhinitis, is. They are closely related to each other. Indeed, there are many maladies closely allied to paroxysms of hay fever, or nervous catarrh. For example: asthma, intense itching, over-sensitiveness of the skin, neuralgia, sick headache, irritability of temper, etc. The first three conditions often characterize attacks of hay fever. Migraine sometimes alternates with these attacks, and at other times supplants them. Uric acidæmia is provocative of all these conditions.

Now it may be asked, "What does uric acid do?" In answer, I will quote from Haig: "Uric acid in the blood contracts the arterioles and capillaries all over the body, producing the cold surface and extremities, raising tension of pulse, and, according to Marcy's law, that pulse-rate varies inversely as the arterial tension, its hows the heart. Headache is a local vascular effect of the uric acid. Excretion of this acid may even explain the mental depression and irritability and their results in the excess of suicides and murders in July. There is an excessive secretion of this acid in the warm months, and a minus excretion in cold weather. During plus excretion there will be high arterial tension, with anæmia of the brain, bad temper, etc. At this time a dose of acid would free the brain circulation from the power of the uric acid, and produce, as Roy and Sherrington have shown, an increase in the size and a free flow of blood in its vessels."

In health about 5 to 8 grains of uric acid are secreted every twenty-four hours, and it is readily soluble in the blood, which is slightly alkaline. If there is increased formation of this acid, no harm results so long as it is properly eliminated and the ratio between it and the urea is not disturbed.

The uric acid theory of hay fever is not antagonistic to the present status of medical opinion or surgical treatment, but, on the contrary, explains questions that were inexplicable before. As a tumor or hypertrophied bone may give rise to convulsive seizures in epilepsy, and as its removal may be followed by relief when no other structural cause exists, so in hay fever, where new growths and other lesions of the

* Read before Mississippi Valley Medical Association, during its Session in Louisville, Ky., October 5–7, 1897.

nasal mucous membrane are present, the attack may be started by the accumulation and the suddenly setting free of uric acid. This precipitates the paroxysm by its irritant action, which finds expression in the group of symptoms characteristic of hay fever or asthma, instead of some one of the other allied diseases. The particular form of manifestation may be determined by the growth, or seat of irritation, located in the nasal cavities. Where this is the only determining factor of the nature of the morbid symptoms, no other organic disease having resulted from the long standing trouble, the removal of such a peripheral source of irritation may give relief from these symptoms, but it may not prevent the uric acidæmia from switching off into other kindred lines of disturbances if it be not corrected.

The uric acid theory makes clear the reasons why some persons suffer from attacks of hay fever under certain favorable conditions in winter, as well as during the warm months. It also unifies all the various forms of the disease. They are all variations of a nervous catarrh.

Impressed with the striking similarity of hay fever and coryza, I resolved to experiment with remedies that were successful in hay fever to learn if they were effective in coryza also. I had demonstrated a great many times that a combination of morphia, atropia and caffein in the proportion, respectively, of $\frac{1}{12}$ gr., $\frac{1}{600}$ gr., and $\frac{1}{6}$ gr., would avert or abort attacks of hay fever and of coryza in their initial stages. I had experienced the same results with effervescent citrate of lithia in hay fever; so I improved every opportunity to test the efficiency of lithia in coryza, and found that if it were taken in doses of about ten grains in a tumblerful of water when the first symptoms of acute rhinitis appeared, the full development of the disease was prevented. Indeed, on the following day, when the patient ordinarily would have suffered much distress, he was free from any symptoms. In some cases, the dose of lithia was repeated, even several times, but the threatened rhinitis was cut short and failed to develop, while the blood was flooded with the lithia solution. In the cases where urinalysis was made, uric acid in excess was found.

Now, the question arises: What has uric acid to do with causing a cold in the head? Bearing in mind what has already been said, the relevancy of the following observations will become apparent:

Uric acid is readily solvent in the alkaline blood, and is largely eliminated by the secretion of the skin. Chilling the skin produces cold in the head, or coryza. This chilling arrests the secretion of the skin, and checks the elimination of uric acid from this surface, besides diminishing the circulation of the blood in the capillaries of the skin; and by thus disturbing the normal balance of circulation it throws an excess of blood into the already weakened blood vessels of a predisposed organ —in this case, the nose. Moreover, in fever the blood becomes of an acid reaction; but cold renders it alkaline, in which state it readily takes up the excess of uric acid stored in the more alkaline tissues, and becomes rich in this irritant of the vessels.

Hence, the relation of hay fever to coryza becomes apparent. The initial stage of the latter is correlative to the former, and the remedies for one are successfully applicable to the other. Reduce the alkalinity of the blood, excite free secretion of the skin to eliminate the excess of uric acid, restore the balance of circulation, and nature will do the rest. Remedies that quickly rid the blood of the excess of uric acid, like lithia, produce prompt results. The physiological action of the coryza tablets referred to is too apparently applicable to require further elucidation.

It hardly seems necessary to add that a vegetable diet, abstinence from meats, sweets, wines and beer, appropriate exercise, and the removal of any peripheral causes of irritation are necessary factors in the treatment.

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Analyses, Selections, etc.

The Gouty Neuroses.

In a paper upon this subject presented to the recent meeting of the Mississippi Valley Medical Association, Dr. L. Harrison Mettler, of Chicago, takes the position that the uric acid is not the cause of the familiar neurotic manifestations of gout. He states that there are, in general, three theories in regard to these neuroses. The followers of Haig believe that they are due to uric acid in the blood (chemical theory). Others hold that they, as well as true gout itself, are but the expression of a neurotic diathesis (neurotic theory). Still others, with whom the author sides, adopt the view that a nervous diathesis, acquired or inherited, is the essential cause, the background, as it were, for gout and all the gouty manifestations; whereas these manifestations may be exaggerated or

made to assume variable characteristics by the auto-intoxication which is itself a result of the faulty metabolism produced by the original faulty innervation. It is a sort of vicious circle, starting with a vitiated nervous system. With Cullen and Duckworth, therefore, he believes that primarily the gouty manifestations are the result of a trophoneurosis. Faulty innervation deranges the metabolic functions of the tissues, certain toxic excrementitious substances are over elaborated or uneliminated, and these re-acting again on a bad nervous system, produce the said neuroses. These excrementitious substances, as shown in the urinary alloxuric bodies, consist of uric acid in combination with the xanthin bases. In the gouty state, the uric acid is frequently diminished in amount, while the increase of the xanthins explains the total increase of the alloxuric substances. With Kolisch, and some other investigators, he believes that the retention of the toxic xanthins is responsible for the general manifestations of gout, whereas the uric acid, which is now known to be formed only in the kidney, and, when found in the blood, is re-absorbed from that viscus, enters into combination to form the quadriurate and biurate of soda, which latter is, for some unaccountable reason, deposited in the joints. The arthritic phenomena of gout, while pathognomonic, are not the essential features of the disease. The arthropathies of some organic nervous troubles, as of tabes, closely resemble the joint manifestations of gout. On the other hand, the remarkable hereditary character and purely neurotic phenomena of gout ally this disease very closely with the purely nervous troubles. The symptoms of lithæmia and of some forms of neurasthenia are also due, in all probability, to the retained xanthins, and not to the uric acid. Hence, neurasthenia, lithæmia, and gout, have many features in common, auto-intoxication being the chief. The uric acid is significant in only one of these, namely, true gout, in which it goes toward the production of the arthritic deposits.

Upon this theory, it is not so difficult to explain the many bizane features of these three sets of diseases, and to account for the variableness of the results ofttimes obtained by the application of the same methods of treatment in apparently the same kind of cases.

In developing his ideas, Dr. Mettler refers to some of the more recent studies upon uric acid by Neusser, Kolisch, Fulcher, and others. Some interesting cases are cited illustrating the neurotic background of the gouty diathesis, and showing the extreme difficulty of deciding always whether the neurotic constitution is the cause or the result of the so-called lithæmic state.

The case of the twelve year old child was one of pronounced lithæmia, and the amelioration of this condition naturally resulted in the amelioration of many of her nervous symptoms; nevertheless, she was a typical hysterical child, with a marked neurotic inheritance.

The latter half of Dr. Mettler's paper enumerates a series of neuroses associated with the gouty diathesis, and under each head are briefly presented illustrative cases, with brief suggestions in regard to diagnosis and treatment.

Among the neuroses seen by the author, in association with the gouty state, are cephalalgia, epilepsy, cardiac arhythmia, chorea, convulsions, vertigo, pain including neuralgia and psychic pain, etc., mental depression, hysteria, exophthalmic goitre, asthma, nervous dyspepsia, diabetes; also multiple neuritis and sciatica, facial paralysis, cerebral apoplexy, and aphasia. The case of exophthalmic goitre was especially interesting, as the hereditary influence was so manifest, and with the three sets of symptoms—heart, eye, and thyroid—the lithæmia, or, rather, auto-intoxication, with rheumatoid manifestations, was markedly present. The author is unable to say that the one set of symptoms in this case was in any way the cause of the other, but he contends it supports his view that the neurotic background is present in most cases in which the neuroses of gout and the gouty state make their appearance.

The aphasic case was rapidly recovering from a long siege of extreme nervous prostration when the injudicious abundant use of fruit and lemonade brought on an acute attack of rheumatism in the right shoulder and arm. As the rheumatic pains began to subside under the vigorous use of the salicylates, amnesic aphasia suddenly made itself known. The patient, for nearly three days, forgot the names (nouns) of things, and after uttering one or two simple words, would turn away in manifest dissatisfaction at her inability to complete the sentence. There were wild delusions and illusions, and such feeble hallucinations, as the hearing of footsteps and bells that did not exist. Frequent questioning proved the absence of the usual tinnitus from the free administration of the salicylates, and the author is disinclined to believe that the medicines had anything to do with the phenomena, from the fact that they gradually subsided about the third day with the subsidence of the rheumatic pains in spite of the continuation of the same medication.

It will thus be seen that the author agrees with Haig and Murchison in assigning lithæmia as the cause of many neuroses, but he differs from them in giving the credit to the retained xanthins, rather than to the uric acid. The paper ought to be read in its entirety to follow the author's argument and conclusions.

Diphtheria Antitoxin is Curative.

Dr. Henry R. Slack, Ph. M., M. D., of La Grange, Cal., expresses (*Atlanta Med. & Surg. Jour.*, November, 1897) a high opinion of antitoxin as a preventive and curative agent in the treatment of diphtheria. His own experience in private practice bears out fully the favorable reports made by the American Pediatric Society by its special committee, and the clinical cases recited by him testify to the prompt and powerful action exerted by antitoxin on both the local and constitutional symptoms of the disease. Dr. Slack concludes that the anti-diphtheritic serum should be administered freely and promptly, as the loss of twenty-four hours may mean the sacrifice of a life. He recommends doses of from 1000 to 2000 units, according to the severity of the case, to be repeated in twenty-four hours if improvement is not manifest. A third dose may be given with perfect safety. Dr. Slack urges the use of the most concentrated strength of an absolutely reliable preparation. In his own cases he used diphtheria antitoxin of both foreign and domestic manufacture. He prefers that prepared by Parke, Davis & Co. for two reasons: 1, it is put up in hermetically sealed, large necked, glass bulbs; 2, it can be obtained fresher, thus increasing its reliability.

Dr. Slack's article bears out the many tributes that have been paid to the anti-diphtheritic serum of Parke, Davis & Co. on the score of its entire freedom from fatalities, casualities or complications of any kind; its great concentration; and the promptness with which its curative powers are manifested.

To Prepare Sterilized Catgut,

Dr. S. H. Champlin, Chicago, says (*Med. Rec.* Nov. 6,) that if a catgut ligature be chromicised and then boiled thirty five minutes in water, it will resist absorption in the tissues from ten to twenty days, according to size. His method is: Wind a single layer of catgut ligature, any length, around a No. 5 or 7 cork; sink it in absolute ether 24 to 36 hours. On removal, place the cork in open air until the ether in the catgut has entirely evaporated. Then sink cork in—Potas. bichromate, 2 parts; formalin (40 per cent.), 4 parts; water, 94 parts. At end of four days, take out cork and wash it a few minutes in running water, and then sink it 35 minutes in boiling water. It is better to keep each ligature separate in a small wide-mouthed bottle—everything being thoroughly sterilized. Corks are preferred to glass spools because shrinkage occurs in the gut; if wound on glass, the ligature flattens into a ribbon-like strand and loses much of its toughness.

Thus prepared, catgut does not become brittle if boiled once, and may be boiled a second time for ten minutes without detriment. If boiled only 15 minutes the first time, it may be boiled a second or third time for 15 minutes each time. The water should be at the boiling point before the catgut is dropped in.

A No. 6 catgut thus prepared, beside some silkworm gut, were used as approximation sutures in an abdominal section. On 10th day, the catgut, like the other sutures, had to be cut to be removed. While it was about one-half its original size, it was very pliable, and required considerable force to break it. The peritoneum, recti muscles and fascia had been closed by continuous suture of catgut from the same cork.

Three pieces of No. 6 catgut were buried under the skin of a dog. *Piece* 1, removed on 7th day, was bleached from a brown to an opaque white, but otherwise was very little changed; *piece* 2, removed on 12th day, was very much reduced in size, and, after being dried, was broken with moderate force; *piece* 3 was looked for on 20th day, but could not be found.

This catgut has been used in pelvic operations, herniotomy, and many subcutaneous operations, but no infection has taken place.

Book Notices.

Text-Book of the Practice of Medicine. By JAMES M. ANDERS, M. D., Ph. D., LL.D., Professor of Practice of Medicine, and of Clinical Medicine, Medico-Chirurgical College, Philadelphia, etc. *Illustrated.* Philadelphia: W. B. Saunders. 1897. Large 8vo. Pp. 1,287. Cloth, $5.50 net; Sheep or Half Morocco, $6.50 net.

This book is an excellent one for the practitioner—young or old. It is up to date—even containing mention of Widal's sero diagnosis method in typhoid fever. It is likewise replete with therapeutic details of constant use. Its arrangement is good for a text-book; and the general style of the work will bring it great popularity. Its rank as authority is well

established by the experience and observation of the author. So that he who adopts its teachings, will find himself "well up"—abreast with the advances in the practice of medicine. The relationship of bacteriology to special diseases has been given a special prominence. This is a good thing just at this time, when so much of importance is being given to the subject, and the causative relation of bacilli and cocci is so well founded. The tables of diagnosis are well arranged, and furnish valuable helps to the student or practitioner In the matter of dosage, the metric equivalent is stated in round numbers in parenthesis. A good index assists in ready reference to any subject discussed. The typography and general style of issue is attractive. It is a cheap text-book at the price named, and will serve as a standard for many years.

Lectures on the Malarial Fevers. By WILLIAM SYDNEY THAYER, M. D., Associate Professor of Medicine in the Johns Hopkins University. New York: D. Appleton & Co. 1897. Small 8vo. Pp. 326. Cloth.

Beside its scientific value, this is an exceedingly interesting reading book, and will, no doubt, have a large demand, especially from those medical men who practice in malarial sections. And yet, in the Index of Authors referred to, we are amazed at the few Southern authors whose writings have been deemed of sufficient value to be quoted. This may be due to the fact that the contributions of Southerners have been mostly clinical; whereas the author has sought the scientific demonstrations of the microscope and of bacteriology. Stress is laid on the statement that "It is impossible to make reliable examinations of the blood for malarial parasites without first being familiar with the ordinary appearances of normal blood, and the more common pathological changes." "One cannot learn to recognize all phases of the malarial parasite in two days or in two weeks." Among interesting practical statements as to the conditions under which malaria prevails, we find that "every experimental attempt to produce malarial fever from drinking water has failed." Individuals drink large quantities of water from the Pontine marshes through a considerable time, wholly without effect. Even healthy individuals may drink dew collected from malarious regions without effect. But the upturning of soil, as in railroad excavations, etc., may cause outbreaks of malaria even in regions where the disease has not existed for years. Cultivation and drainage may do much toward purifying gravely malarious districts. But we must commit the book to the reader for want of space to say more about it; yet with the assurance that the doctor who attentively reads it will find himself entertained, instructed, and confirmed in opinion as to many points that have heretofore been mostly suggestive.

Essentials of Obstetrics. By CHARLES JEWETT, A. M., M. D., Sc. D., Professor of Obstetrics and Pædiatrics in Long Island College Hospital, and Obstetrician to the Hospital. Assisted by HARROLD F. JEWETT, M. D. *Illustrated by 80 Woodcuts and 3 Colored Plates.* Lea Brothers & Co., New York and Philadelphia. 1897. Cloth. 12mo. Pp. 358. $2.25.

We find in this book practically all that is required in most obstetric experiences. We are specially pleased with the concise manner in which signs or symptoms and procedures are graphically described. Many good authors would have taken about twice as much space to have said as well what Dr. Jewett has sufficiently fully said. The book is well up to date. The illustrations are all apt and greatly help the student in understanding the text. We are sorry the publication was not out in time for it to have become well known to obstetric college students and tutors before text and guide books were selected for the session of 1897–8.

Editorial.

Caution as to the Use of Koch's New "T. R." Tuberculin.

Drs. Trudeau and Baldwin, Saranac Lake, N. Y., publish (*Med. News*, Aug. 28, 1897) notes of bacteriological examination of 76 vials of Kock's "*T. R.*" *new tuberculin* [described in *Va. Med. Semi-Monthly*, April 23, 1897, by our Vienna correspondent] received in 11 lots and bearing 11 different dates of manufacture. Various yeasts like growths were found in the first six lots of the new "T. R." tuberculin—each bottle being *cork stoppered.* Only seven of the 49 *glass stoppered* vials of the remaining five lots were contaminated by moulds. But these results suggested the probability that living tubercle bacilli might remain in the contaminated bottles. The contents of these vials were subjected to centrifugation, when several well stained tubercle bacilli were found in the sediment of two vials. Inoculation experiments upon a guinea pig prooved the virulence of the bacilli thus separated. It will be remembered

that in the "*T. R.*" *new tuberculin*, the living tubercle bacilli are first thoroughly triturated. Those that remain uncrushed are *presumably* separated from the fluid emulsion or preparation by centrifugation alone. But the investigations of Trudeau and Baldwin, as above referred to, prove that some bacilli escape the crushing process, and thus an improved technique in the manufacture of *new tuberculin* is demanded before it can be indiscriminately used. Otherwise additional foci for the development of tuberculosis may be given. Certain it is that, in view of the possibility of living, uncrushed tubercle bacilli being in the freshly bought vial, its contents should be thoroughly tested for the remaining of such a germ. The great difficulty of preventing accidental contamination of the "new tuberculin" during the complicated process of manufacture without the use of heat or antiseptics should also be borne in mind. It is suggestive, also, that all of the first six lots, comtaminated with various yeast like growths, were in *cork stoppered* vials.

It is not improbable that some of the untoward results of the use of the T. R. new tuberculin of Koch may have been due to the failure of the manufacturer to extract the bacilli; whereas the wonderful curative effect of experiments with other preparations may have been with specimens of the new tuberculin absolutely free of bacilli, moulds, etc.

Information Wanted Relating to Serum Therapy.

Some time ago, the Richmond Academy of Medicine and Surgery appointed Drs. Arthur Jordan, Ernest C. Levy and Landon B. Edwards a committee to inquire into the extent of use, by the doctors of Virginia, of the several antitoxins or serum therapy, with a statement of the results of such use. A surprisingly small number of replies have yet come in to the committee, which leads to the conclusion that the request has not been noticed. In response to circulars now sent out by the committee, it is sincerely to be hoped that whoever receives such circular will promptly fill in answers to the questions and return them to the Chairman of the committee. One of the objects of the proposed report is to ascertain the extent of use of serum therapy by Virginia doctors. Hence negative answers are of decided value. Whoever knows of a Virginia doctor who has used any of the antitoxins or serum therapeutically will confer a favor by at once notifying Dr. Jordan in order that he may forward blanks to be filled. As far as practicable all replies ought to be in hand by December 1st, 1897.

Mississippi Valley Medical Association.

The twenty-third annual meeting was held in Louisville, October 5th to 8th, inclusive. The features of this meeting were excellent and timely papers, lively discussions, liberal entertainments and lovely weather—the whole being enhanced by the prevailing sentiment of Kentucky good-fellowship and hospitality. The Association has never been so lavishly entertained as at Louisville, and this city has added another lustrous star to the constellation with which the local profession is already adorned. Many prominent and able men were present. The officers elected for the ensuing year were: Dr. John Young Brown, St. Louis, *President*; Drs. A. P. Buchman, Fort Wayne, Ind., and A. J. Oschner, Chicago, *Vice Presidents*; Dr. Henry E. Tuley, Louisville, *Secretary*. The next meeting of the Association will be held on the second Tuesday in November, 1898, at Nashville.

Dr. Elliott T. Brady

Has removed from Chatham Hill to Abingdon, Va., where he will continue practice. He adds strength to the profession wherever he may go.

Obituary Record.

Dr. William D. Cooper

Died at his home near Morrisville, Fauquier, Co., Va., October 30th, 1897. He was born in Culpeper county, Va., December 26, 1820. After graduating in medicine from the University of Pennsylvania in 1845, he returned to Virginia to enter upon the practice of medicine near his home—soon afterwards removing to Fauquier county, where he practiced until his death. He was a Fellow of the Medical Society of Virginia since 1879; was its President 1882–3, and was elected an Honorary Fellow of the same in 1883. His interest in the Society was ever manifest by his frequent attendance and participation in its proceedings. He was active in founding the Medical Society of Warrenton, Va., of which he was President. His interest in the profession was also proven by membership of the American Medical Association. He contributed papers, of practical interest to several journals and to the proceedings of the societies to which he belonged. He possessed the qualities of the Christian doctor —dying at a ripe age full of honors, and having the esteem and affections of a large circle of friends.

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PHELPS' RAPID OPERATION FOR EXCISION OF THE KNEE AND ITS INDICATION.

By WARREN O. PLIMPTON, M. D., New York, N. Y.

I assume, in the preparation of this paper, that excision of the knee comes within the scope of the orthopædic surgeon's domain of treatment; that it has its own place as well as mechanics in dealing with pathological conditions of the knee; and that the surgeon would have recourse to it under proper limitations to stay the ravages of disease and save for his patient a useful limb. The success of the operation is no longer an experiment when performed under right conditions and by a skilful operator, and should save not only limbs but lives. The when and how of the operation are matters of discussion, points upon which general surgeons differ, and again the orthopædic and general surgeons take issue. Extreme individual views are entertained by both. This can be only too evident when a distinguished Edinburgh surgeon tells us that all cases, whether of synovial disease alone or those in which the bone is involved as well, should be excised. And, on the other hand, the orthopædic surgeon who would carry mechanical treatment to the verge of amputation is treading upon extreme territory. Excision of the knee should occupy the position of a "golden mean," to be resorted to where mechanical treatment has not and cannot avail, and before amputation is a necessity. That a stiff leg is to be preferred to an artificial limb is a generally recognized fact, and amputation is a last resort greatly to be deplored.

Too much cannot be said in favor of early treatment by mechanical and fixation methods in disease of the knee-joint. And I would emphasize strongly that if the profession at large should recognize disease of this joint in its incipiency, and would employ or have employed extension and fixation methods of treatment, comparatively few cases would get so far as to necessitate excision. It is the duty of every orthopædic surgeon who teaches, either in the under-graduate or post-graduate schools, to lay special stress upon early recognition as well as early mechanical treatment of these diseases. But, alas! the old diagnostic song of rheumatism, strain, or struma, with its treatment refrain of iodine, blister, poultice and wait, is still sung by many a general practitioner and surgeon. The result is that, long after the disease has passed its incipiency, the patient is referred, or applies himself, to the orthopædic surgeon for treatment.

A condition of disease more or less advanced presents itself, involving different structures, with deformity more or less pronounced. The skill and experience of the specialist must strike the balance and determine what line of treatment is best pursued. Where abscesses and sinuses are not present, the immobilization and extension plan should at least be thoroughly tried. A large proportion of cases will yield to this method, and show immediate improvement, with prospects of ultimate recovery.

Since antiseptic methods of operation have so diminished the risks to life and limb, we are justified in interfering in an operative way much earlier than was formerly deemed judicious. Exploratory incisions are, in many instances, to be recommended. They many times furnish the surgeon with much valuable information respecting the extent of the disease. A finger introduced into a joint with antiseptic precautions will tell the facts, which otherwise would be recognized too late to save limb or life. It is then easy to say what operative procedure is necessary. I think, as a rule, more disease is found than was suspected.

When the fixation and extension plan of treatment has been conscientiously tried, and has not arrested the disease, which is manifestly on the increase, we should explore the joint, and do whatever the conditions demand,

whether to wash out or excise. When the articular surfaces are destroyed, the bone and the soft parts extensively involved, the joints should be excised (except, perhaps, in young children, which exception I will mention later). If, however, only the synovial membrane and soft parts are infiltrated, and the joints filled with fluid and cheesy material, it should be washed out with some of the various solutions recommended by Schede, Koenig, and the late Prof. Volkman, of Germany.

The washing may be accomplished by a trocar and canula, first emptying the joint of its fluid contents, then flushing out the parts through the canula with whatever solution is desired. An incision into the joint large enough to admit the finger is to be preferred, since by this procedure we can, through the opening, investigate the extent of the disease, and the flocculent material inside, if there be any which would not pass through a canula, can be evacuated. In Dr. A. M. Phelps' clinic, with which I am connected, at the New York Post-Graduate Medical School and Hospital, the irrigation used is a considerable quantity of a 1 to 2,000 bichloride solution, with much kneading and manipulation of parts to bring the solution in contact with the entire joint-surface. The 1 to 2,000 should be followed by a 1 to 5,000 bichloride solution. The incision is then closed by first stitching up the capsule closely, and then the outside parts with another line of sutures. The fixation plan may now be continued as before. The result is, as a rule, satisfactory.

The question of how long mechanical treatment should be continued before resorting to operation is still open to discussion. I would say a few weeks or months were long enough to determine if the disease is being arrested. The only valid argument in favor of treatment extending over years in many cases with a severe type of disease, is the hope or possibility of a useful and movable joint, with little or no shortening. But when we see ankylosis result in cases long treated, with the accompanying discomfort or pain during a part or all of that time, with the system exposed to further infection, and others whose joints have been excised walking about with a useful limb and absence of pain, having been treated perhaps only as many months as the first has years, we stop to consider.

Comparing modern statistics in excision of the knee in the hands of good operators, so far as mortality and useful limbs go, when as good a showing can be made (in these two particulars) as in a series of sixty-five excisions of the knee, upon which I shall presently report, we are led to ask why the operation is not done more frequently. Statistics prove that when joints are doing badly operative treatment, combined with mechanical, gives the best results.

In addition to the class already mentioned as suitable for excision are the following: Relapsing cases of long standing; abscess cases, with or without sinuses, whether containing tubercular or pyogenic infection (with extensive involvement of bone and infiltration of soft parts); cases of osteomyelitis involving the joint; knees with anchylosis in the faulty positions of flexion, luxation, or subluxation, or old arthritic cases, with but little bone disease, which do not yield to mechanical treatment. There is still another class where excision is the only alternative, namely, in those patients who live in a locality where expert orthopædic attendance cannot be had. Also in the case of the laboring man, who has no means of support while undergoing a prolonged period of treatment. Even though the disease be slight, their circumstances make the operation a necessity. Excision of the knee should not be practiced in children under eight, and, preferably, twelve years of age. Cutting at the epiphysis at that time of life greatly interferes with the growth of the limb. Relapses as regards flexion frequently occur. Excision should only be performed in these young cases where the disease is so extensive that no other operation would avail. Arthrectomy or other scraping operation is to be recommended.

All abscesses of joints, whether in children or adults, should be opened and thoroughly drained, sinuses should be laid open, and the necrosed bone cut away by scoop, chisel, or gouge. Drainage through the joint in young patients with abscesses should, if needed, be kept up as long as the disease is active. Fixation should also be continued at the same time.

In looking up opinions on how advanced in age patients may be to bear the operation of excision well, I find it is generally conceded that the danger to life increases in rapid ratio after fifty, although often operations are successful much later. Statistics place the most favorable time in early life.

I must not fail to mention reproduction of tissue through the medium of blood clot, and its importance in the consideration of surgical treatment of the knee. Since antiseptic methods have made it possible to utilize this most important principle in the reproduction of new tissue, many limbs have been saved which were formerly doomed to amputation, because

of the great destruction of bone. It saves the bone in length where many and extensive foci of disease appear in the head, even where it extends into the shaft, by filling in the spaces and later becoming replaced by bone tissue. It is not necessary to saw repeated sections from the articular end until no diseased foci can be found, but with a sharp scoop cut them out, allowing them to fill with blood, leaving the healthy bone as the framework from which the new cells may find their way into the clot, thus transforming it into solid bone.

In the series of excisions upon which I shall report, there are several examples of great destruction from osteomyelitis and tubercular disease, where amputation was avoided and several inches saved to the length of the limb, by allowing the cavity to fill with blood, through which new tissue was formed. In one case of osteomyelitis as much as seven inches of bone was reproduced (see Fig. 7). In determining what operation for excision of the knee best subserves the requirements, it may be said that the method which allows of the most complete removal of all diseased tissue, and gives perfect drainage, retains the part in best apposition, and fixes the bones without the use of pins or wire; and last, but not least, the one that can be done with the greatest ease and rapidity is to be preferred.

Without entering into discussion of the merits and demerits of operations devised and performed by different surgeons, I believe that Fenwick's section of the bone (see Fig. 5), with Phelps' method of removing diseased soft parts together with bone, as described below, fulfills all the requirements mentioned above, with a few exceptions. Where the head of the femur is destroyed, precluding the section according to Fenwick, Dr. Phelps has devised a method to meet this condition by sawing a wedge-shape at the end of the femur and a V in the tibia for its reception. The essential feature in Fenwick's operation is the sawing of the bone in a line parallel to the articular surfaces, so that when placed in apposition the convex surface of the femur fits the concavity in the head of the tibia. The bones are so locked that there is little or no chance of their slipping and no tendency to rotate outward in the dressing. No pins or wires are needed to keep the bones in contact. This is greatly in the patient's favor, since the necessary period of anæsthesia is shortened by ten to fifteen minutes. Where wire and pins are used, they not infrequently give trouble later.

The length of time taken for excision of the knee has an important lesson for us in the statistics respecting the mortality of the operation. Mr. A. G. Miller, of Edinburg, in a report on excision, advised against it in certain feeble patients (otherwise suitable cases), recommending amputation because it could be done in a much shorter time, remarking that while in either operation the shock was about the same, the effect of the longer period of anæsthesia was to lessen greatly the patient's chance of life. There is a vast difference in the ether-shock, whether the patient is under its influence twenty minutes or two hours. This point is clearly set forth and proven in a series of clinical lectures by Dr. William H. Porter on anæsthesia, delivered before the class of the New York Post-Graduate Medical School and Hospital.

The shock of the operation in excision of the knee must, of necessity, be profound. Add to this the shock produced by ether in an operation lasting from one to two hours instead of twenty minutes, and the chance of saving the patient's life is greatly reduced. Except in

Fig. 1.—First Incision.

extreme cases, no surgeon ought, after he is familiar with the operation here recommended, to take more than fifteen to twenty minutes to operate and apply the dressing. If the steps

of the operation, which I will recount, are followed, I think you will be convinced that it can be performed within the time specified.

Entering the knife a little posterior to and above one of the condyles of the femur, a curved incision is made, extending sufficiently below the patella to expose the margin of the head of the tibia, terminating at a corresponding point on the opposite condyle. (see Fig. 1).

FIG. 2.—Flap Turned.

This incision opens the joint more extensively than any other. Dissect the flap well up, as in Fig. 2. A curved incision above the patella removes nearly the entire synovial sac, together with the patella (see Fig. 3). Instead of picking at the diseased parts with forceps and scissors before going further, thus consuming valuable time, with consequent danger to the patient, the lateral and crucial ligaments are divided and the knee is flexed, as in Fig. 4. With a saw, proceed at once to resect the bones, at the same time sawing out a large portion of the diseased soft parts, as well as bone (see Fig. 5). This done, the entire joint is removed, with nearly all the disease. With scissors and Volkmann spoon the remaining disease is quickly cleared away. This concludes the cutting part of the operation. Ligate the three or four arteries if necessary. A continuous suture closes the incision, drainage at the same time being introduced (see Fig. 6). The dressing is the usual gauze and cotton, with plaster-of-Paris extending from the toes to the groin. It is due more to the method, than the skill of the surgeon, that the operation is so quickly performed.

FIG. 3.—The Patella and Capsule of Joint Removed.

(Fig. 8 shows bending of the femur at and above point of excision, on account of leaving the limb in a semi-flexed position at time of operation. Fig. 7 shows the leg in which seven inches of the femur was removed and reproduced by blood-clot organization—La Roe, of Ticonderoga, N. Y.; he has a little more than one inch of thickening. In all rapid operations Phelps' hemostatic forceps (Fig. 9) are indispensable, as they crush the small arteries and time is thus saved, as ligatures are not re-

quired. They are blunt, and the ligature slips over the point of them easily.)

FIG. 4.—Articular Surfaces Exposed.

FIG. 5.—Bone Resected.

In children under twelve years of age it is best to resect the ham strings to prevent subsequent flexion. Dress the limb in a perfectly straight position, else flexion (see Fig. 8) may result later. The limb should be swung up tor an angle of forty degrees. The patient should

not walk on the limb without support, until after there is solid union. Some form of support, either of plaster of Paris or a brace, should be continued from three months to one or more years, depending on the age of the patient and condition of the limb. The younger the patient, the longer the support should be worn to prevent flexion.

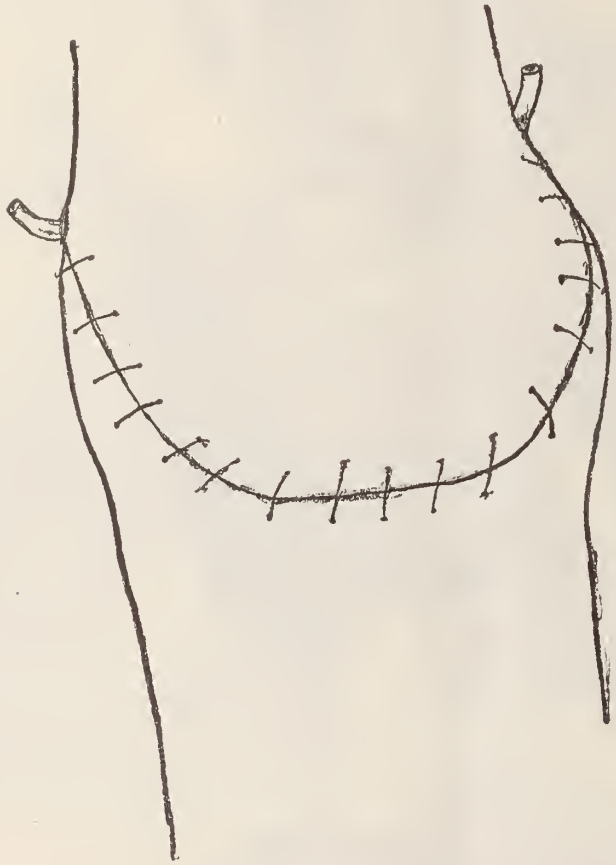

Fig. 6.—Wound Closed.

It is hardly reliable to quote statistics made before the employment of antiseptics, respecting the mortality of this operation. Quoting from Dr. Phelps' paper of 1888, reports of 329 operations by different operators give a mortality of 3.03 per cent. In this table I find Fenwick gives one of the best records, viz., 1 death in 28. Miller gives the following statistics: In 30 excisions of the knee, performed in the Royal Infirmary, Edinburgh,* 1 death occurred; 13 knees were excised for synovial disease alone, the bone not being involved; 18 good and useful limbs resulted; 3 had fairly useful limbs; 5 had to be amputated.

Lancet, February 3, 1893.

Barker, at the University College, London (January, 1893), reports twenty-five operations on the knee-joint, without a death, but all but four were arthrectomies. Only four were excised, one of these being under twenty-one years of age. He is inclined to think, in speaking of the limit of age being a contra-indication for excision, that if antiseptic methods are carried out, the time of life is not to be considered more seriously than in other operations of similar magnitude.

Fig. 7.

Fig. 8.

Fig. 9.

Mr. H. G. Hows, from Guy's Hospital, Lon-

don, reports 130 cases of excision: Four deaths were due to operation, or a trifle over three per cent. mortality; fifty per cent. had satisfactory limbs; eight had shortening over two inches; seven short from sequestra; most of the remaining had less than one inch of shortening; twenty-one lost sight of; twelve cases, ages three to twelve years, became much flexed; ten others slightly flexed; twenty-six were amputated within three years for suppurating sinuses and necrosed bone; two for other causes; five died from the amputation.

I have obtained, from the New York Post-Graduate Medical School and Hospital, from the City Hospital, and Mary Fletcher Hospital, University of Vermont, Burlington, together with ten from private case books, the records of sixty-five excisions of the knee, performed by Dr. Phelps, the table of which I append. I shall here summarize results. No deaths occurred from the operation itself; one patient died from excessive administration of ether while on the table; one died three months after the operation, from sarcoma appearing in the knee after it was entirely healed. A large number of these cases were most unfavorable for excision, inasmuch as the disease was very extensive, multiple sinuses occurring in soft parts, with bones honeycombed with tubercular disease or osteomyelitis. Nearly all had at some time been faithfully treated by mechanics. On most of these Fenwick's section of bone was performed; Phelps' method was employed in a number.

No wiring or pinning of bones was done except in the first cases. No amputations have occurred in this series. All resulted in bony ankylosis, in four months to one year, except three from the Post Graduate, recently operated upon, in which sufficient time has not elapsed for such union.

Bony union should be considered a perfect result in excision. One re-excision appears. In one imperfect case a painful scar occurred, which scar tissue was later removed; subsequently the leg was fractured in a railroad accident, and the case lost sight of.

Operation in only six cases was followed by pus. In this series the average age was 20.67 years; youngest, seven years; oldest, fifty-three years.

Average shortening in fifty-seven cases, 0.88 inch; least shortening, 0.5 inch; greatest shortening, 3 inches.

Average time in hospital, 7.7 weeks.

Form of bone-section employed. Not mentioned, 3; Volkman's,* 1; Neuber's,† 3; Phelps', ‡ 8; Fenwick's, § 50.

The average time of operation in the last half of this series will not exceed fourteen and one-half minutes, except in an exceptionally bad case. During the last five years I have assisted Dr. Phelps in nearly, if not quite, all of his excisions performed at the New York Post Graduate Medical School and Hospital. The watch has been held repeatedly by members of the class of matriculates present, and the time of operation including dressings has oftener been less than more than fourteen and one-half minutes. At the last operation in which I assisted, the watches of several were held. It was just ten minutes from the time the first incision was made until the last plaster bandage was in place. The last case mentioned left the hospital in six weeks from the day of operation, with all parts healed. That no mortality due to the operation has occurred in this series of sixty-five cases, I believe, is attributable in a great measure to the fact that the patients were under ether but a very few minutes, hence having very little ether-shock added to that of the operation.

19 *West 84th Street.*

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*Transverse incision. Patella sawn through. Transverse section of femur and tibia. Patella and bones subsequently wired.

† Patella turned up with flap. Transverse incision of femur and tibia. Patella nailed to femur and tibia. Bones wired.

‡ Patella removed, wedge made of femur to fit V-shaped incision of head of tibia. Diseased soft parts sawn away with the bone, saving time. Bone lock, no wiring required.

§ Curved incision of bones parallel to articular surfaces saves time by avoiding wiring and nailing.

Since writing this paper, Dr. Phelps has performed eleven more, making a total of 76, without a death from the operation. Three of these cases are now in the Post-Graduate Hospital. In one of them the operation occupied only 7½ minutes.

[See table on pages 476–7.]

TABLE OF EXCISIONS OF KNEE PERFORMED BY DR. A. M. PHELPS.

No.	Name.*	Age in Years.	Disease.	Operation.	Pus.	Result.	Shortening.	Time in hospital or bed.	Duration of disease.	REMARKS.
1	.....	9	Tubercular	.....	None	Imperfect.	.....	3 mos.	Several years.	Flexed to 45°; multiple sinuses. After eight months flexed to 45° again. Resected a second time by removing wedge of bone from tibia and making wedge of femur to fit into it. Hamstrings were resected. Perfect result in one year.
2	.....	9	"	Phelp's'	"	Perfect.	.....	3 "	Several years.	
3	.....	10	"	.....	Yes	"	¾ inch	3 "	1 year.	Flexed to 45°; disease of bone and soft parts; bones wired; hamstrings resected.
4	.....	16	"	.....	None	"	.....	3 "	Several years.	Necrosis head of femur; subluxation of tibia.
5	.....	20	"	Volkman's	"	"	.....	2 "	10 years.	Flexed; disease of bone and soft parts; bones wired. Walked on leg four months after operation.
6	.....	13	"	Neuber's	"	"	.....	2 "	6 "	Much flexed; disease of bone and soft parts; bones pinned.
7	.....	21	"	"	"	"	.....	7 weeks	Several years.	Extensive bone disease.
8	.....	20	"	"	"	"	.....	7 "	Several years.	Extensive bone disease.
9	.....	19	"	Fenwick's	"	Death from ether.	.....	.....	Several years.	Patient died at time of operation from excessive administration of ether.
10	M. M.	18	"	"	"	Perfect.	3 inches ¾ inch actual	6 weeks	12 "	Thigh honeycombed with sinuses, flexed at right angles; shortening from operation ¾ inch; leg 3 inches short from non-development. Patient presented at Academy of Medicine 1888.
11	J. H.	53	"	"	"	"	½ inch	7 "	16 "	Had been treated by extension and fixation for one year; used crutches.
12	B. R.	24	"	"	"	"	¾ "	6 "	8 "	Abscess found in both epiphyses; bracing had been tried; of no used. Flexed 45°.
13	L. W.	28	"	"	Stitch absc'ss	Imperfect.	¾ "	12 "	8 "	Extensive disease in head and shaft of femur; excavated, and two inches of femur reproduced by aid of blood-clot. Case discharged with bony union, but returned one year later with pain. Cut down on bone, found no disease; dissected out scar-tissue.
14	C. D.	16	"	"	None	Perfect.	½ "	9 "	10 "	Flexed 50°; had resisted all treatment. Soft parts and bone invaded, and large foci of disease in bone.
15	R. W.	20	"	"	"	"	¾ "	8 "	3 "	Extensive suppuration and destruction of bone. Had worn fixation and extension splint one year and six months.
16	F. M.	21	Sarcoma	"	"	"	¾ "	7 "	2 "	Not known to be sarcoma at time of operation; joint filled with gelatinous and cheesy material; probably sarcoma supervening on tuberculosis. Disease returned three months later, from which the patient died.
17	W. P.	12	Tubercular	"	"	"	¾ "	6 "	3 "	Extension and fixation splints had been worn, with crutches.
18	O. R.	24	"	Phelps'	"	"	1 inch actual.	7 "	20 "	Never had walked on limb; much non-development. Phelp's operation on account of destruction of head of femur. A wedge was made of femur, and a V of head of tibia. She walks well.
19	I. B.	17	"	Fenwick's	"	"	⅛ inch.	7 "	6 "	Had been braced and used crutches for years. Extensive bone disease.
20	I. L.	31	"	Phelps'	Yes	"	1 "	10 "	20 "	Multiple sinuses; 7 inches of femur removed except, shell of bone ¾ inch wide anteriorly and ½ inch thick; V made in tibia; reproduction of 7 inches of femur by aid of blood-clot.
21	G. W.	20	Osteomyelitis.	"	None	"	1 "	6 "	16 "	Extensive bone disease and many sinuses; flexed 45°.
22	J. H.	24	Tubercular	Fenwick's	"	"	¾ "	7 "	18 "	Joint destroyed and foci in epiphyses; flexed to right angles.
23	W. B.	18	"	"	"	"	½ "	6 "	7 "	Flexed 45°; had been treated without avail; many foci in epiphyses, and soft parts destroyed by infiltration.

24	C. M.	15	Osteo-myelitis.	"	"	"	¾ "	7 "	10 "	Sinuses; much dead bone removed.
25	R. P.	18	Tubercular	"	"	"	¾ "	8 "	12 "	Discharging sinuses; ten years of treatment ineffectually.
26	A. L.	11	Osteo-myelitis.	Phelps'	"	"	1½ "	10 "	7 "	Head of femur destroyed; Phelp's wedge and V operation done.
27	B. R.	31	Tubercular	Fenwick's	"	"	1 "	6 "	18 "	Two sinuses; much dead bone.
28	M. P.	17	"	"	"	"	½ "	7 "	9 "	Great flexion with ankylosis; old sinuses. From history probably tubercular.
29	C. N.	12	"	"	"	"	¾ "	6 "	7 "	Treated with braces, but constantly relapsing; foci of disease in both epiphyses; joint destroyed.
30	A. C.	24	Osteo-myelitis.	Phelps'	"	"	1 "	10 "	16 "	Sinuses numerous; flexed 45°; slight motion; removed much dead bone.
31	A. R.	19	Tubercular	Fenwick's	"	"	¾ "	7 "	12 "	Flexed right angles; cartilage gone; soft parts much infiltrated
32	C. R.	26	"	"	"	"	½ "	6 "	16 "	Flexed 45°; fibrous ankylosis.
33	R. A.	42	"	"	"	"	¾ "	7 "	30 "	Flexed; tender; constantly relapsing; had been treated years.
34	P. C.	21	"	"	"	"	1 "	6 "	11 "	Joint destroyed; slight motion; cartilage gone; foci of disease.
35	J. L.	18	"	"	"	"	¾ "	7 "	8 "	Flexed 35°; discharging sinuses leading to dead bone.
36	C. I.	24	Osteo-myelitis.	Phelps'	Yes	"	1½ "	10 "	16 "	Much bone disease with sinuses; head of femur partially destroyed. Had worn knee-splint for years.
37	N. P.	11	"	Scraping	"	"	1½ "	24 "	4 "	Epiphyses both destroyed; sequestra loose in joint; cavity of bone invaded.
38	A. B.	19	Tubercular	Fenwick's	None	"	¾ "	6 "	7 "	
39	A. T.	18	"	"	"	"	1 "	8 "	5 "	Had to be re-excised three months later, with perfect result.
40	T. P.	31	Osteo-myelitis.	"	"	"	1 "	6 "	20 "	Old sequestra with disease; cavities in both epiphyses.
41	L. P.	17	"	"	"	"	¾ "	5 "	9 "	Bony ankylosis at right angles.
42	M. W.	27	Tubercular	"	"	"	1 "	8 "	6 "	Extensive disease of bone with infiltration of soft parts.
43	R. G.	7	"	"	Yes	"	¾ "	2 years	2 "	Great destruction of bone and soft parts; burrowing of abscesses; thigh and calf laid open; repeated operation for burrowing of pus. One year in P. H. Hospital; now at Daisy Field's home, cured.
44	R. A.	21	"	"	None	"	½ "	6 weeks	8 "	Ankylosed at bad angle. Disease was still active.
45	A. B.	27	"	"	"	"	¾ "	.....	21 "	Bad angular ankylosis. Bony union after one year.
46	A. M.	14	"	"	"	"	1 "	7 weeks	6 "	Joint suppurating and bone diseased.
47	R. G.	12	"	"	"	"	1½ "	16 "	7 "	Deformity right, angled; sinuses, joint destroyed and extensive burrowing of pus.
48	C. G.	17	Osteo-myelitis.	"	Yes	"	1 "	10 "	12 "	Disease involved lower end of femur; removed large sequestra from shaft; joint destroyed.
49	A. P.	19	"	"	None	"	¾ "	8 "	13 "	Sinuses; disease had partially destroyed both epiphyses; sequestra removed from shaft.
50	W. P.	14	Tubercular	"	"	"	¾ "	6 "	8 "	Bad angular ankylosis; disease still active; joint destroyed.
51	G. W.	28	"	"	"	"	1 "	7 "	12 "	Bad deformity; fibrous ankylosis; joint filled with new material and tubercular foci of disease.
52	W. K.	16	Angular deformity.	"	"	"	¾ "	6 "	12 "	Had recovered from disease with flexion; ankylosis 45°.
53	C. W.	16	Tubercular	"	"	"	½ "	5 "	8 "	Joint filled with tubercular material; capsule ruptured and quadriceps extensively destroyed.
54	E. G.	12	"	"	"	"	½ "	6 "	6 "	Sinuses; joint destroyed; sequestra in head of femur.
55	E. R.	19	"	"	"	"	¾ "	7 "	12 "	Sinuses; diseased bone; extensive invasion of soft parts.
56	J. B.	21	Angular anchylosis, tubercular.	"	"	"	1 "	10 "	16 "	Ankylosis at bad angle; disease still active.
57	G. R.	41	Old osteo-myelitis.	"	"	"	1 "	9 "	31 "	Removed sequestrum from femur after incision.
58	H. K.	24	Tubercular	Phelps'	"	"	1¾ "	12 "	14 "	Head of femur destroyed; Phelp's wedge and V made for union of bones.
59	H. S.	16	"	Fenwick's	"	"	½ "	6 "	8 "	Cartilage loose in joint and bone carious.
60	W. S.	12	"	"	"	"	¾ "	6 "	7 "	Joint destroyed; foci of disease in bone.
61	G. B.	28	"	"	"	"	¾ "	7 "	9 "	Extensive infiltration of capsule and soft parts; cartilage gone and bone carious.
62	J. S.	19	"	Phelps'	"	"	3 inches	10 "	13 "	Head of femur and tibia both gone.
63	A. B.	23	"	Fenwick's	"	"	1 inch	6 "	12 "	Fibrous ankylosis and sequestra.
64	A. W.	14	"	"	"	"	¾ "	7 "	8 "	Was wearing an extension brace; joint filled with tubercular material; foci of disease in bone.
65	B. S.	17	"	"	"	"	¾ "	.....	8 "	

*Names of first nine patients not entered.

VARIOUS TREATMENTS OF EPITHELIOMA*

By M. B. HUTCHINS, M. D., Atlanta, Ga.,

Clinical Lecturer on Diseases of the Skin and Syphilis, Atlanta Medical College.

We have had, of recent years, a good many papers upon the treatment of epithelioma, but the methods advocated have been chiefly of one kind—that by caustics. My object in writing this brief paper is to help "swing the pendulum back" and to give a fair resumé of the various treatments commonly in use. The advocates of chemical caustics have made many converts to their methods—this being the easier because of the popular fear of the knife, and the false reputation had in the minds of the people by "cancer doctors," who have cured (?) all of their cases.

Presumably the pathology of epithelioma is well known to those doctors who pretend to treat it scientifically, and certainly this knowledge is necessary to any one who expects to succeed in its treatment. The curative treatment is that which completely eradicates the disease. This is practically divided into that by (1) *chemical caustics*, (2) *the actual cautery*, and (3) *instruments*.

It is claimed for *chemical caustics*, especially arsenious acid, in Marsden's paste, and caustic potash, that their use enables us to cure the disease with less loss of tissue than is usually possible with the knife. These caustics are said to destroy the major part of the disease while the resulting inflammation produces a toxalbumin which destroys any outlying cells, such as are often left after the operation of excision. If the inflammation, intense in character, produces the toxalbumin, we should get it with any agent which induces a sufficient degree of inflammation. The Paquelin cautery causes an intense inflammation, in many cases, as does the galvano-cautery. Hence these should do as well as chemical caustics.

Injections of absolute alcohol may produce a severe inflammation, as may the strepto-cocci of erysipelas, and the bacillus prodigiosus.

All of the above methods have failed in competent hands and on apparently properly adapted cases. We all—who see cancer cases—encounter numbers of victims of caustic pastes and plasters, used by "cancer doctors," and we have seen returns of the disease even follow this treatment by competent physicians.

The only way *the knife* should be used is for purposes of thorough excision. Though it is often used improperly, I venture the opinion that, properly used, it gives as good results as the caustic methods. An incipient epithelioma or a small one is nearly as easy to remove permanently as is a wart. Unskillful treatment by any method is useless.

I am not wedded to the knife, but I believe that it is not yet in position to be supplanted by caustics. The latter are often more convenient to use, but convenience does not constitute a confession of superiority. As to the less destruction of tissues by caustics, it is more than likely that a case treated by caustics will show as large a wound after the final separation of all necrotic tissue as will the knife, properly used, when the operation is finished, even if the wound be left open.

Now as to results: A wound, left after treatment, healing promptly leads us to think we have cured the disease, and such belief is often correct. But one or two things may yet happen. A few cells having been left behind, the disease re-appears, at some time. Or, the original disease is cured, but the edge of the scar furnishes an arrangement of cells favorable to the formation of a new epithelioma. Until sufficient time has passed to insure the non-occurrence of either of these events we cannot laud the method used. Another point is that operators may carelessly implant particles of the cancer growth in healthy tissue and thus, by the knife, bring condemnation to the instrument.

With the exception of those measures which thoroughly destroy or remove the abnormally growing cells, there are no methods which deserve attention save such as are used solely as palliatives. The *curette* can but rarely get all of the disease. *Electrolysis* occupies, practically, the same position. *Vegetable caustics* are lauded from time to time. There is no doubt that cases in which these remedies succeed would have yielded with equal readiness to the familiar methods.

I have caused the disappearance by atrophy, and apparent cure, of a small, non-ulcerative epithelioma on an old lady's forehead, by *two or three freezings*, for five minutes each, at intervals, *with the chloride of ethel spray*. Applications of boiling water have been recommended. *Arsenic* internally has been said to act favorably, yet this drug, long continued, has produced lesions which evolved into epithelioma.

Some "cured" cases of epithelioma doubtless fall under that terse designation, "a mistake in diagnosis."

The gist of the subject is that caustics can be

* Read by title before the Tri-State Medical Association at Nashville, October, 1897.

used where more convenient, the knife under other circumstances of convenience; *pyoktanin* and like agents where we can only palliate. The thermo or galvano-cautery have their definite place as curative means.

Mild caustics, such as attack the tissues but superficially, are worse than leaving the disease alone, from the fact that they but stimulate the growth to increased activity. I believe, in fact, that many epitheliomata would remain innocuous if left absolutely alone and protected from irritation. Many cases date their rapid increase in malignancy from the time of some imperfect treatment. . The majority of cases of incurable epithelioma which I have seen have been teased with mild caustics, home remedies, or have been tortured into their hopeless state by caustic pastes and plasters.

I venture the opinion that there are more recurrences, case for case, after the various caustic methods than after the knife.

In the choice of methods we must often be governed by the prejudices of the patient, even where our judgment inclines us to go contrary to them.

The *caustic potash* destroys all tissue with which it comes in contact, leaving a blackish, gelatinous mass. It is often very painful in spite of the topical or interstitial use of cocaine solution, and too much cocaine injected where its diffusion cannot be limited is dangerous. After the potash application there is no bleeding unless you disturb the necrosed tissue. Antisepsis is not needed where you intend to use a caustic, or the cautery. The visible disease and a little more are destroyed by the potash. No such dressing as is used after excision is needed. A small growth can be destroyed by it in a minute or two, without troublesome preliminaries. Burning sensations may last an hour or more. *Pure acetic acid* is better than the dilute to protect the surrounding skin, It is doubtful if its application to the cauterized part neutralizes the potash sufficiently to afford much relief to the burning sensation. Left to itself, the eschar requires a week or two to separate, and there often remains a thin necrotic layer which must be removed or waited upon. As a rule, healthy granulation is slow.

Chloride of zinc is very painful. But I have never used it.

Marsden's paste requires perfect contact with the disease, even if this must be obtained by first removing redundant tissue with instruments. Applied directly to the papillary form, the paste has little effect, being "selective." Where indicated, it must remain on for many hours, and perhaps be repeated. Admixture of cocaine has but little effect upon the pain, and the same is true of the local use of morphia. The very action of the arsenic which prevents its own absorption must interfere with the absorption of anesthetic drugs. Cocaine or morphine interstitially would do better. After the paste has acted as thoroughly as it will, a blackish, rather firm eschar is left, for the separation of which probably as much time is needed as after the use of the potash. Healing is also slow.

Of course we can hurry matters by bringing into use the knife or curette, if the doctor and patient are both willing.

I do not believe it possible for the caustic, or its "toxalbumin," to have any effect upon cancerous glands away from the original center of disease. Naturally, sympathetically, inflamed glands will subside upon the removal of the cause of irritation.

With the thermo or galvano cautery at a dull red heat we get a brown-black, dry eschar; the less resistant cellular elements are more deeply destroyed while the fibrous tissue holds the necrosed mass firmly. Separation of this eschar and the appearance of a clean wound require considerable time, and this wound heals slowly.

To sum up briefly: Caustics or the cautery may be used where circumstances and the patient's wishes demand. The knife may be employed where the patient will consent and the physician prefers.

Healing of the wound and the final discharge of your patient come earlier after the knife. A slow healing of the wound and many days of dressing it follow caustics and cautery.

Cases must be selected to insure success with any method and failure waits on him who dares treat any and every case of epithelioma which comes to him.

311–312 *Fitten Building.*

CASE OF OBSTRUCTION OF THE BOWEL FROM CARCINOMA—REMARKS.*

By EDWIN L. MORGAN, M. D., Washington, D. C.

Intestinal obstruction, as is well known, may be due to a variety of causes, and is subdivided into many varieties That fecal impaction may directly or indirectly cause the death of patients, medical literature shows. Dr. John S. Bristowe and Mr. Gay have reported fatal cases.

* Read at a meeting of the Medical and Surgical Society of the District of Columbia, October 7th, 1897.

Others, including Dr. Da Costa, have had under their care patients who caused them the greatest anxiety. Fecal impaction is not only a disease, but a symptom of a functional or pathological condition. Persons suffering from "obstipation," may go months before evacuating their bowels, and cases of long-standing intestinal obstruction have recovered without surgical interference. I should like to hear the results of various methods of treating intestinal obstruction, diagnoses made in these cases, and especially in those of an obscure character, as differentiated from diseases of the ileo-cæcal valve and its locality. Fecal impaction may be of very little value to the surgeon —in fact, of no interest whatever.

Before reporting a case, I wish to call attention to the following: Da Costa says symptoms common to intestinal obstruction, namely, borborygmi, which are especially apt to occur in obstruction of the large intestine, when existing with tenesmus, are important in localizing the trouble. Fecal matters arrested in the descending colon or at the sigmoid flexure, may cause palpable distension of the cæcum and pain in that region. Then, too, in the locality mentioned, obstruction of the small intestines also causes pain and swelling. Da Costa again says: "For with the exception of a tumor, dull on percussion and resistent to the touch, there is nothing absolutely indicative of the lesion being at some particular spot. And it is hardly necessary to say that a swelling of this kind cannot always be found." The pain and the fullness in this region may be caused by a disease of the cæcum or its appendix. Many a person laboring under enteritis or peritonitis has been violently purged to remove the stubborn constipation, believed to be due to a mechanical hindrance in the bowel; and, on the other hand, many a case of intestinal obstruction has been treated solely with reference to the inflammation that may attend it, and without regard to the source of that inflammation.

On Feb. 3rd, 1894, I was called to see Mr. S., white, aged 67 years, of temperate habits, slight physique, who gave the following history: He was a plasterer by trade, and had for a number of years suffered from torpidity of the liver, and in early childhood had prolapsus of the rectum, which was cured; but, during the past fifteen years, on evacuating the bladder, he was annoyed by the falling of the bowel; his case was complicated by hemorrhoids. At times he suffered from prolonged and prostrating diarrhœa, but for a long time he had been comparatively free from these attacks, and occasionally was constipated. For the past three weeks, he had been very constipated, although he had little or no control of his bowels. The discharges were small and watery. Sometimes they were of mucus, pus, and contained a little blood. Frequently it was impossible for him to avoid soiling his clothes in his haste to reach the closet. During the past twenty-one days, scarcely any feces were passed. From January 26th to February 3rd, he would be for several days without any movement of the bowel, nor even an inclination to one. Again, he would have to go two or three times a day without the desired effect. Had taken purgatives, including castor oil, cascara sagrada, salts, etc., without any improvement in his condition. He suffered intense agony all day Thursday, as well as on Friday, and during the night his sufferings were almost unbearable, causing him to roll from side to side of his bed. Found his temperature 99½° F.; pulse strong, 80 to the minute; radial artery tortuous, and hard to touch; skin normal; tongue coated with a very heavy white fur; breath fetid; kidneys acting well; complained of the "rolling and rumbling" of his bowels; intense pain in the regions of the umbilicus and left lumbar corresponding to a point, little below the umbilicus, to the left of the same, to the extent of three inches, thence downwards over the region of the descending colon for a like distance, and then across to the starting point, forming a right angle triangle. In the area described was centred all of his sufferings. On examining his abdomen, which was slightly swollen, no tumor could be detected, but great tenderness existed over the region already mapped out, and some dullness on percussion, extending down over the descending colon, was perceptible. There was no tenderness to any degree over other parts of the abdomen. He had passed some gas per rectum. The patient was otherwise in a fairly good condition. Ordered the following:

℞. Hydrarg. chlor. mit..... .....gr. v.
Pulv. rhei.....
Sodii bicarb.....
Pulv. sacch.....āā gr. iij.
Pulv. ipecacuanhæ.....gr. ij.
M.: et. ft.—capsules No. 3.
Sig.: Take at once.

In addition, large doses of Rochelle salts were given, well diluted, three or four times a day, while quart injections of hot soap suds, containing glycerin, were administered every two hours. Then hot water, containing to each quart one to eight ounces of glycerin, was used without effect. Now and then a little

colored water would be returned after these enemata, bloody mucus, and a very small quantity of pus and mucus mixed. Explored the rectum, expecting to find masses of fecal matter, but there were none. A part of a large flexible catheter was attached to a syringe, and glycerin in hot water injected well up into the bowel with no result. Next ordered small doses of sulphate of magnesia, well diluted, to be taken hourly, and also one-quarter of a grain of powdered opium in combination with one-half grain of calomel every two hours. At 10 P. M., managed to bring away one teaspoonful of mucus streaked with blood, a small flattened piece of fecal matter half an inch in length and breadth, and one third of an inch in thickness.

The diet of the patient was liquid, consisting of beef peptonoids in teaspoonful to tablespoonful doses every fifteen minutes, alternating with extracts of meat, beef tea, and a little whiskey, as required. Gave little water, allowed ice, with extract of meat, as large quantities of fluid had already been taken with the medicines. Had a bad night, and on Sunday morning he was no better, the abdomen was tender, tympanites increased, breath more offensive than on previous day, swelling and tenderness over the ileo-cæcal valve, and gurgling on pressure well marked. A little gas passed per rectum, vomited the salts, and as he was unable to retain it after several trials it was discontinued, and the injections were kept up with little or no benefit during the day. It may be well to state, purgatives given by the mouth only increased his sufferings. In the evening, I suggested calling in a surgeon, but the family objected. The man passed a good night. On Monday, at 7½ A. M., he was suffering acutely, and I gave hypodermically sulphate of morphia gr. one eighth, with sulphate of atropia gr. $\frac{1}{150}$ (much against his will, as he is opposed to the use of the drug). At 8 and at 9 A. M., the same combination repeated by the mouth. His abdomen was very much swollen, tender to the touch; complains of his bowels "rolling and rumbling," which seems to aggravate his condition. The pain in the left lumbar region, or over the descending colon, had nearly disappeared, and tenderness likewise, except on deep and firm pressure. Swelling and gurgling had increased over the ileo-cæcal valve—the swelling being well marked, bulging above the surrounding area. I again insisted upon a consultation, and the family requested Dr. C. V. Boarman be called to decide upon the advisability of an operation. Later in the day, Dr. James Kerr saw the case with me, and on making an examination, he decided we should wait developments. He recommended an injection of half an ounce of fresh ox gall, like quantity of castor oil, oil of turpentine one drachm, white of one egg, and water sufficient quantity to make four ounces. Raising the buttocks, a rectal tube was passed well up into the bowel, an ordinary bulb syringe attached, as little air as possible was allowed to get into the tube, the enema being given slowly, and allowed to remain in the bowel half an hour. About 6 P. M., six ounces of thick fluid passed, containing what seemed to be a quantity of shreds of tissue, but probably coagulated mucus; as no microscopical examination was made of them, I am not able to state what it was. During the day, one or two doses of a quarter of a grain of sulphate of morphia with atropia had been taken by the mouth, and just prior to the injection a little whiskey was given, as also one-eighth of a grain of sulphate of morphia hypodermically. At 7 P. M., a clyster of hot water and glycerin was given, and returned containing a little fecal matter, and more shreds of tissue. At 9½ P. M., ox gall mixture again given through rectal tube into the bowel. The enema was given very slowly, being retained about half an hour, when it should have been retained at least three hours; eight ounces of very thick fluid was passed, containing lumps of fecal matter larger than a pea. At 1 A. M., one-fourth of a grain of sulphate of morphia was given in combination with atropia sulphate. He passed a bad night, complaining of burning up in the bowels. On Tuesday morning, the patient not improving, although tenderness over the flexure of the descending colon was decidedly less, while pain, swelling and tenderness increasing over the right iliac region and abdomen, Dr. Samuel C. Busey was added to the consultation. After a careful examination, he expressed the opinion that it was a case of fecal accumulation, was adverse to an operation, and advised suspension of medicines by the mouth, liquid diet in small quantities at short intervals, and an enema of the infusion of senna, thrown into the bowel very slowly and to be retained as long as possible. Calomel and opium capsules discontinued. Eight ounces of the infusion of senna were injected through rectal tube into the bowel, and retained three hours. The result was a large operation, mostly liquid in character, with many lumps in it—one being three inches in length and nearly two inches in diameter, and another piece was an inch in diameter and five in

length. The first large mass of feces was flattened on one side though oval in shape, was somewhat triangular in form. About 8:30 P. M., the senna was repeated, remaining in the bowel three hours, and a larger and more satisfactory evacuation followed. He complained of pain in the small of his back, and especially before an action he passed a great deal of gas per rectum. Turpentine stupes, covered with oil silk, had been used early in the case, but he would throw them off as he did hot cloths, saying they increased his sufferings. The morphia and atropia flushed his face, and only favored the accumulation of gas in the intestines; therefore very little was given.

These injections were continued twice a day until February 10th, then once a day for several days; then hot water was used, and lastly a pill, composed of aloin, gr. $\frac{1}{4}$; sulph. strychniæ, gr. $\frac{1}{60}$; ext. belladonnæ, gr. $\frac{1}{8}$; ipecac, gr. $\frac{1}{16}$. Diet was liquid; peptonoids, extract of meat, beef tea, chicken, beef, and mutton broths, and oysters without the hearts, boiled custard, lean meat, toast, bread; milk punches and whiskey were allowed as he continued to improve. On February 20th, not being satisfied with the movements of his bowels, in addition to the purgative pill, he took internally four tablespoonfuls of the infusion of senna, having two large operations, suffering intensely. Up to this time had been doing well; all pain, swelling and tenderness had subsided. I saw him on February 22d. The abdomen was slightly tender along the ascending colon, and especially one inch to the right of and below the umbilicus. There had been swelling, which had disappeared on the day previous. I warned him against experiments. Learned some days after I saw him he had passed a little red blood. On February 27th, had some swelling of the abdomen, little pain and tenderness, passing some small pieces of hard fecal matter, covered with coagulated mucus, mixed with dark blood. On this day, contrary to advice, took more infusion of senna suffering considerable pain, and having eight actions, leaving him quite weak, and he remarked, "It was the first good clearing out he had since he was taken sick." In a few days he was out. Now and then I would hear of his trying some purgative water.

He was taken sick a second time some months after his recovery, calling in another physician. As no notes were kept, a very short and incomplete history only can be given. Mr. S—— had a second attack of obstruction of the bowels, which in a few days yielded to treatment. A third attack occurred, which also was relieved. Finally, he complained of an intense burning in the abdomen, accompanied by an intense thirst, longing for ice, and things could not be made too cold for him to swallow.

There was nausea and vomiting towards the last and a diarrhœa, which was hard to control. He died in August, 1894, after great suffering. The family only allowed a partial but hasty postmortem to be made. Adhesions were between the ascending colon and other intestines. There were cancerous nodules in the liver, and the sigmoid flexure was constricted, only allowing the finger to be passed through the stricture; and also the bowel at this location was surrounded by a cancerous mass. As shown by microscopical examination, "the specimen of a portion of colon showing new growth and tumor of liver, from a white man, aged 67, forwarded by you to the Army Medical Museum on August 7, 1894, have been subjected to microscopical examination which shows the case to be one of carcinoma of intestines and liver."

Mr. S—— has a sister who has cancer of the breast involving the region of the axilla and shoulder joint. A short time previous to his death, cancer of the bowels was suggested as causing his sufferings. There were no postmortem evidences of appendicitis. Nor were there any signs of cancer when attended by me.

My first impression was I had a case of volvulus of the sigmoid flexure, while Dr. Boarman thought it was invagination of the bowel in this locality. I am sorry not to be able to give a more complete history of the patient after he passed from my care, as here is where the value of this paper would have been greatly enhanced. Mr. S—— had no cough when I last saw him. I am personally more interested in the early diagnosis of cases of this kind. The pain in this case, as already stated, shifted from the left inguinal to right inguinal region, and he had at one time symptoms that might lead one to suspect appendicitis. Cases of intestinal neurosis have been operated upon for appendicitis, tumor being made out before operation, and none found at the operation. My opinion was, the cause of trouble was in the left inguinal region, although shifting pain at that time puzzled me as to cause of this symptom.

2315 *Pa. Ave., N. W.*

CHRONIC CONSTIPATION, WITH PARTICULAR REFERENCE TO ITS TREATMENT.

By D. H. KRESS, M. D, Battle Creek, Mich.,
One of the Physicians to Battle Creek Sanitarium.

It is only of late years that attention has been called to the fact that many of the diseases of the human family—viz.: Migraine, headache, vertigo, neurasthenia, rheumatism, gout, epilepsy, Bright's disease, atheroma, organic heart disease, cancer, and, in fact, most of the ills of old age—are often due to the absorption of toxic substances from the alimentary tract, resulting from the retention and decomposition of foods. These poisons circulating in the blood are brought in contact with the sensitive brain cells, giving rise to numerous nervous symptoms, as depression, despondency, and even melancholia, impatience, indolence, dullness, inability to concentrate the thoughts, etc. They may be hypochrondriacal illusions and the manifestation of peculiar whims; or, on the other hand, stimulation may be produced, followed by a corresponding depression.

A case was reported some time ago of a woman taken with a violent attack of acute mania, the result of retention of the feces, the bowels not having moved for fifteen days. When this condition was removed, the patient was as rational as ever. There was no history whatever of any mental disorder in the family record.

I have at present under my care a patient who is influenced in this way. Some days he feels like shouting—using his expression—being in a condition almost of acute mania. This is followed by a feeling of depression so intense that he is afraid of committing suicide. During these attacks he is most miserable and usually withdraws from company altogether, not wishing any one to speak to him. It is true that alcohol has made many unhappy homes, by converting loving fathers into demons; it has only recently been recognized, however, that substances may be generated within the body, which are equally poisonous and produce similar results.

Causes.—Constipation results from diminished secretion, atonic conditions and relaxations of the abdominal muscles, due to sedentary habits and irregularity in defecation. It is, however, most frequently due to diminished peristaltic action, not only of the colon, but of the entire alimentary tract. I have discovered dilatation and diminished motility of the stomach in nearly every case examined by me. As a result of this sluggish condition, the food products are retained too long, and putrefaction ensues with the production and absorption of the toxins already mentioned. Some of these toxins really diminish the intestinal secretions. In *hypopepsia*, a condition where there is a diminished secretion of hydrochloric acid, the decomposition begins in the stomach, while in *hyperpepsia*, on account of the hypersecretion of hydrochloric acid, the decay is prevented until after reaching the intestines and colon.

In many patients, constipation is the result of an irrational diet—a diet largely made up of meats, eggs or milk—due, no doubt, largely to the lack of waste material. For want of a stimulus, the bowels become sluggish, and finally refuse to act. Condiments, as pepper, mustard, large quantities of salt, alcohol, coffee, tea and sugar, also produce constipation The free use of soft foods, liquids and poor combinations have much to do with producing constipation

Another cause of constipation is the excessive use of drugs to produce action of the bowels. Pills and patent medicines of every description are flooding the market, the frequent use of which is gradually wearing out the power of the intestinal canal.

Treatment.—In all cases of chronic constipation, natural and rational means should be employed rather than drugs. The consensus of opinion among medical writers is in favor of dietetic and hygienic means, and that "as few purgatives as possible" should be used. This condition cannot be cured with drugs; in fact, the frequent use of laxatives and purgatives, either simple or drastic, are harmful in their effects, and in the end only tend to aggravate the existing condition. These drugs act as stimulants to the alimentary canal, the reaction being as great as the stimulation, resulting in greater debility and loss of muscular tone The continued use of the large warm enemata are also injurious. The colon may be washed out and temporary relief be obtained, but the warm water and the distension of the colon both produce greater debility.

The treatment in these cases that has given the most satisfactory results will be given in detail.

1. *Diet.*—The matter of diet is of the utmost importance. On account of the general debility of the digestive tract and the dilatation of the stomach, I have found it necessary to proscribe foods which readily undergo putrefaction, such as flesh foods, eggs, milk, cheese, and many of the vegetables; pies, cakes and

pastries of all kinds. The patient is placed on an aseptic diet, consisting of grains, fruits and nut products. I have found granose—a preparation of wheat, thoroughly cooked, starch mostly converted into dextrin, crisp and very toothsome and easily digested—of the greatest benefit, being aseptic and having a slightly stimulating effect. One great advantage obtained in prescribing this food is due to the thorough mastication which it necessitates. Every patient who hopes to recover from these conditions must take time to eat, since digestion begins in the mouth. The greatest amount of pleasure derived from eating consists in the length of time the food remains in the mouth, not in the rapidity and quantity of food that is swallowed. The taste buds are on the tongue, and not in the œsophagus or stomach.

Fruits in general are aperient, refreshing, and take the place of drinking at meals—so common at all seasons, particularly during warm weather. Fruits are cleansing to the mucous membrane, removing food and detritus from the mouth. They increase the specific gravity of the urine, hence, increasing the elimination of waste products; then they act as a stimulant to the glandular and muscular activity of the stomach, intestines and colon.

Thoroughly ripened raw fruits are preferable, nature having furnished a natural appetite and a keen relish for these, the most delicately flavored of all foods. Apples, peaches, pears, grapes, oranges, strawberries, blueberries, etc., are all good. Where there is a condition of hyperpepsia with an excess of acid and dilatation of the stomach, baked sweet apples, baked bananas, apple sauce, marmalade of prunes, and figs may be used with benefit.

The grain preparations are most thoroughly cooked, and these, together with various nut products, are prescribed according to the indications of each individual case.

Special Swedish Manual Gymnastics for Constipation.

Special movements are used, but as soon as improvement is noticed, the special movements are discarded, and in their place movements of a more general strengthening nature are used. The patient is put through the following movements by skilled attendants:

I.

1. Reach-support-standing. Knee-bending with abdomen and loins-resistance.
2. High-reached-support-standing, leg backward-dragging.
3. Lying, half-raising with abdomen and loins-resistance.
4. High knee-stride-standing-alternate-twisting.
5. High-ride sitting, trunk-rolling with abdomen and loins-resistance.
6. Reach-support-standing, sacrum-beating.
7. Stretch-support-standing, transverse abdomen-stroking.
8. Stretch-sitting, arm-bending with back-support.

II.

1. Half-stretch-reach-support-swing-standing, knee-bending with abdomen and loins resistance.
2. Sit-lying, raising with knee-support.
3. Lax-sitting, side-vibration.
4. Half-stretching-high-ride-sitting, bow-twisting.
5. Stretch-support-half-crook-standing, knee-downward-pressing.
6. High-ride-twist-sitting, circular-twisting with abdomen and loins-pressure.
7. Crook-half-lying, pelvis pressing.
8. Stretch-support-standing, transverse-abdomen-stroking.
9. Heave-support-standing, hips-alternate-twisting.
10. Stretch support-standing, chest-expanding.

III.

1. Half-stride-support-twist-standing, forward-twisting.
2. Half-sitting, knee-bending and stretching.
3. Half-stretch-side step standing, side-bending.
4. Reach-support-fall high-knee-standing, back-raising with loins-resistance.
5. Half-stretch-high ride-twist-standing, forward-twisting.
6. Stretch-support-side-bow standing, leg-inward-pressing.
7. Think-whole-stride-sitting, backward-dragging.
8. Swim-hanging, sacrum-beating.
9. Stretch-standing, arm-bending and stretching.
10. Reach-support-standing, spinal, column-hacking.

This last treatment is intended especially for general effect. In addition special abdominal massage is given, particular attention being given to the deep kneading movements, following in the direction of the colon. Special mass-

age is given to the cæcum, employing the French movement, using the first and second fingers, working slowly along the colon. Special movements are also given to the gall bladder.

Sedentary habits are corrected by exercise in the gymnasium and in the open air, which tends to tone up and strengthen the abdominal muscles. Special stress is laid on acquiring the habit of having a regular time for defecation. Unless this is attended to no special relief can be obtained. The best time is shortly after breakfast, on account of the feeling of fullness and the increased peristalsis induced by the ingested food. The practice should be carried out daily regardless of desire. It may be necessary for one or two weeks to take a small injection (1 pint) of cold water with a temperature of 70 to 80 degrees, retaining it only a moment. The effect of this is not to flush out, but to tone up the colon, the cold water increasing the muscular contractions, and peristalsis, thus assisting nature.

The general exercise in the gymnasium should be light, moderately rapid, and taken at regular intervals. Severe exercise, such as lifting heavy weights, swinging on rings and bars, are not essential, and in some cases harmful.

I have found this simple measure of great value. In connection with these measures, general tonic baths are given, with the Scotch abdominal douche, in which the temperature of the water is changed in rapid succession from hot to cold. The contraction of the abdominal muscles and of the intestinal muscular coat, caused by this treatment, has proved a most excellent measure. Hot and cold douches are given to the feet to produce reflex stimulation of secretion, fomentations to the abdomen and spine, electric light baths, electric tube baths, salt glows, local faradization, and the abdominal wet girdle to be worn at night.

The importance of the scientific application of hydrotherapy in these cases cannot be overestimated. The tonic effects derived from these measures are more decided than from the administration of strychnine, nux vomica, belladonna, calomel, etc., the standard drugs for this condition; for the already abused nature is not overburdened with an additional poison. The baths stimulate to greater activity all the emunctories and the poisons that have been accumulating are rapidly eliminated.

With the above treatment, I find, with but very few exceptions, that the most obstinate cases yield; patients that have not had a natural movement of the bowels for twenty years, after two or three weeks the bowels will begin and continue to move regularly. I report a few cases giving the most prominent symptoms relative to each.

Case I.—Male, age 34; has used meats, milk, eggs, sweets freely; in addition, uses tobacco, coffee, and condiments. Has had two attacks of gastritis, the last attack resulting in prostration. He took calomel for three months until salivation occurred; then he took strychnine three months, and he has taken many other drugs without benefit. Bowels have not moved naturally for years. Extremities were cold, attended with various neurasthenic symptoms. Had an extreme craving for food; sleeps poorly; lower border of the stomach is one inch below the umbilicus.

Patient was put on treatment already outlined. His bowels were moving regularly in three weeks, and he has gained ten pounds in weight.

Case II.—Male, age 43; never was sick; eats hastily; over-eats; has used sweet foods to excess; stomach distended. Had a sensation of fullness and the formation of gas, due to fermentation. Bowels were very badly constipated; had no natural passage in twenty years. Tongue badly coated; stomach one and one-half inches below the umbilicus, and had a hyper-sensitiveness of the lumbar ganglia. His weight has dropped from 209 pounds to 150. Chemical analysis of the stomach fluid showed a marked excess of HCl.

In one week's time he had his first regular movement of the bowels, and gained two pounds in weight. He continued to gain two pounds each week until he left, and the bowels remained regular.

Case III.—Male, age 39; has been very irregular in his habits; ate when he had nothing else to do. He has used fat meats freely, and two cups of coffee at each meal; chewed and smoked tobacco; used liquor; tongue coated badly; stomach dilated; constipated for eighteen years. Bowels after three week's treatment became regular and moved daily, and a decided improvement was made in the general health.

Case IV.—Male, age 49; has had indigestion for thirty years, and feelings of general debility; feels tired; soreness of the bowels; gas formation and fermentation. Had taken calomel, strychnine and laxatives without effect.

Under treatment he had a natural movement of the bowels in five days, and they continued regular. The strength test charts of the patient

show a gain of over 1,700 pounds in lifting power.

CASE V.—Male, age 48; has been constipated for ten years. In the last six months he has become much worse; has taken fifty packages of Carlsbad salts and tried "Hall's Secret," but both have failed. He had intense frontal headaches previous to coming; had taken two grammes of calomel twice a week. The tongue was badly coated.

In seven days the bowels moved naturally, the first time in ten years. His improvement was beyond all expectation both of himself and friends.

These cases might be multiplied to show that the treatment outlined in this article is the most rational line of treatment that can be followed, and one that is most highly satisfactory.

Mental therapeutics must also be recognized *in all chronic cases of constipation.* Patients after being affected for years, after having tried every nostrum, including mind cure, will naturally give up all hope. By explaining the physiological effects of these rational methods and the results we have obtained in nearly every case, hope takes the place of despair. This no doubt is an important factor in the restoration of these cases. To tell a patient he is not constipated is a lie, therefore the so called mind cure is wrong. It is trickery and deception to have patients exercise faith in a worthless nostrum. These may give temporary relief, because of the mental excitement and confidence, but the relief is never permanent, since the real causes are unremoved. It is lawful and necessary to inspire confidence and faith in natural remedies and proper diet, the physiological effects of which can be explained and clearly understood by the patient.

SOME REMARKS ON ARTIFICIAL INFANT FEEDING.*

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At first thought this may perhaps seem a rather simple subject for our attention to-night, but when we consider the enormous mortality from gastro-intestinal diseases among artificially fed infants, and the close relation of artificial feeding to gastro intestinal diseases, I hope we shall be able to awaken some new interest in this subject; for I dare say there is more ignorance displayed in the ordinary methods of infant feeding than in any other important branch of medicine.

The fault lies both with mothers and physicians; the mother doesn't know how to feed her child because she has never been instructed, and, in many cases, the physician doesn't know simply because he has never taken the time and trouble to familiarize himself with the rational methods of infant feeding, but, in the majority of cases, it is simply carelessness or indifference on the part of the physician.

It is the duty of every physician who attends a woman in child-birth to give the mother explicit directions as to the feeding of the child, and, as far as possible, see that she carries out his instructions. He should also never fail to impress upon her the fact of the great dangers of improper feeding.

Of course, if possible, the child should be allowed to nurse its mother, but if such is not the case, and a suitable wet nurse is available, by all means secure her; but in every case see that the nursing is done at regular and stated intervals, according to the size or age of the child; but I am digressing from my subject, for what I wish chiefly to speak of is bottle-feeding or artificial feeding.

Bad infant feeding is practiced not only among the poor and ignorant, but also among some of our very best people.

The mortality among bottle fed children is enormous as compared to that among breast-fed children. Recent statistics from the large cities of America and Europe show that infant mortality has been steadily increasing for the last twenty-five years. This is due to many causes, such as over-crowding, neglect, unhygienic surroundings, but, as Holt well says, more important than all, is artificial feeding, as at present ignorantly practiced. The capacity for maternal nursing seems to be diminishing each year, both among the poor and rich, hence there are more bottle-fed children now than ever before. The mortality from gastro-intestinal diseases seems also to be on the increase, both actually and relatively, except in a few cities in which they have adopted new methods of infant feeding. Artificial feeding *per se* is not to be blamed for the great mortality, but bad artificial feeding, which sooner or later results in some chronic gastro-intestinal disorder, makes a patient very liable to the acute diarrhœal diseases, and very apt to succumb. The child's system is below par, as it were, and is readily attacked by disease.

* Read before the Norfolk Medical Society, November 4th, 1897.

Often a mother will bring to your office a poor, fretful, emaciated child, showing every sign of malnutrition; and will tell you it has been *sickly* all its life, and that it has a *weak* stomach and bowels, and that it vomits after every feeding, and has numerous actions every day. She comes to you to get medicine for its vomiting and diarrhœa. If you question her carefully as to the child's history, she will perhaps tell you a story similar to this: that a certain physician attended her in labor, and as she couldn't nurse the child, he told her to feed it on a certain brand of condensed milk. She fed it on this milk for several weeks, or perhaps even months, and the child gained in weight and seemed to thrive, but suddenly the child began to vomit, and have diarrhœa and grow thin, so, at the suggestion of some lady friend or neighbor, she thought it wise to change to some other branch of condensed milk; but soon found the child did not improve, so she adopted the suggestion of some other friend, and tried Mellins' food with equally bad results. She then used cow's milk, perhaps pure or diluted with an indefinite quantity of water, but found the child's symptoms to grow worse. Then, in deep despair, she comes to consult you and wants some medicine for the child's symptoms.

The picture may be slightly overdrawn, but, with few slight modifications, it is identical with the history that can be obtained from hundreds of mothers.

It does seem to be a fact that many physicians regard the feeding of an infant as too simple for them to bother with, and they leave it entirely with the mother; and many mothers seem to think they can bring up the infant all right with the aid of a few suggestions from friends or relations.

In my limited experience, I have seen most trouble arise from condensed milk-feeding. Infants fed on condensed milk are usually overfed in quantity of food and underfed in quality of food. Condensed milk can be used to advantage to bridge over an emergency, as in certain acute illnesses, or to be fed with a proper addition of cream, but alone it rarely ever does well for any length of time. I have seen some very fat and apparently well developed infants fed entirely on condensed milk, but it is exceedingly rare to find an infant fed alone on condensed milk that hasn't some signs of rickets or malnutrition.

If we look at an analysis of condensed milk the reason is plain; it has too much sugar and too little fat. Mellins' food, and the various other artificial infant foods, are about the same as condensed milk, and are open to the same or similar objections.

Of course there are lots of poor mothers who are unable to buy any other food except these cheap foods, so they have to be used.

The nearest approach we have to mother's milk, or a perfect infant food, is cow's milk in modified form, to suit the size and age of the infant.

We must bear in mind that milk is not a single article of food, but a combination of foods, and that the fat, sugar, proteids and ash represent these different foods.

The best and most scientific method of modifying cow's milk, and the method adopted by the best authorities, is that of Prof. Rotch, of Boston. Of course it is impossible to carry out his exact method in private practice; however, in a slightly modified form, it can be used with great satisfaction in the home of any intelligent mother, whether she be rich or poor.

We must first know the composition of normal mother's milk at different periods of lactation, and then know the composition of average cow's milk. The only apparatuses necessary are a glass graduate, an ordinary teaspoon, and a plain sterilizer with the proper number of bottles. It is better to have a high-registering thermometer made for the purpose, but it is not absolutely necessary. The ingredients needed are ordinary good, fresh cow's milk which will deposit a fair quantity of cream on standing for four hours, plain granulated sugar, (or, better, milk sugar), a bottle of lime water and a bottle of boiled water. With these we can approximate very nearly the proper proportions of the different ingredients. The cream supplies the fat, cream and milk both supply the proteids, and the lime water the alkali which brings the mixture to the proper reaction. Of course, the use of the sugar and water is apparent.

When the fresh milk is first received in the early morning it should be strained through a freshly-boiled cloth into a clean basin of some kind, and then covered with another clean cloth. The milk should then be set on ice or in ice water for four hours. After this time there will be sufficient quantity of cream deposited for our purpose. From a quart of good milk thus treated you can usually skim off about eight ounces of eight-per-cent cream (*i. e.*, eight per cent. fat.) After taking off the cream, you can prepare your formula. First dissolve sugar in the water, and then put in the other ingredients, and thoroughly mix. Then fill up as many bottles as you need feedings for the twenty-four hours, and stop them with

clean cotton. Next put bottles in the rack of the sterilizer, and immerse in the basin of the sterilizer, so the water is on a level with the milk in the bottles. Next set the basin on a stove or over a lamp of some kind, and apply heat. If you have a thermometer for the purpose, insert it in the basin of water, and when it registers 170° F., remove heat and re-apply as necessary, so that the water remains between 167°–170° F. for twenty minutes. Then remove bottles and put on ice at once. If you have no thermometer, allow the basin to remain over the fire till the water is seen about to boil, then remove and cover with an ordinary thick towel, and let alone for twenty minutes, after which, put bottles on ice and feed warm. Warm the milk by setting bottle in warm water. (A simple apparatus for "sterilizing" milk, according to the above process, has been devised by Dr. Freeman, of New York city. It is a simple device, and can be used by any one. It is called Freeman's Pasteurizer.)

This process of heating milk will destroy all ordinary forms of bacteria, and milk thus heated is very little changed in taste, and is very digestible. Ordinarily, it is best for milk not to be sterilized or heated to 212° F. for any length of time, unless it is to be kept for several days, as the high degree of heat causes it to have an unpleasant taste, and to be more indigestible on account of the coagulation of the proteids which is supposed to begin when the temperature reaches 171° F.

It is not a difficult task to instruct an intelligent mother how to prepare the milk according to the formula you write her. Often it is hard to get the correct proportions at first for the child's digestive powers; but if we see it doesn't agree with the child, close attention to symptoms and character of its stools will tell you what is wrong. The ingredients hardest to regulate are the fat and proteids, so it is best to begin with a formula weak in fat and proteids, and gradually increase these ingredients to the proper per cent as we see they are digested.

The quantity of food and the time of feeding are almost as important as the quality of food. Most infants are fed too often; one meal hasn't time for digestion before another is forced upon it, and soon there are fermentation and indigestion and we wonder why the food doesn't agree.

It must also be borne in mind that an infant doesn't require the same quantity of fat in summer as in winter. The fat is not assimilated in very warm weather, and simply acts to disarrange digestion; so in the warm spring and summer months the milk should be given more diluted.

Sugar is a very important element of an infant's food; it remains at about a constant per cent. in mother's milk, and should be kept at this in one formula for modified milk. Do not forget that it is as much a food as fat or proteids, and is not used simply to *sweeten* the milk.

I once heard of a physician who said he had stopped using sugar in his milk for children as he thought it fermented too easily, and that he was using *glycerin* to sweeten the milk. Milk alone should constitute an infant's food till it is about a year old, and during the early part of the second year, in addition to milk, such simple articles as well-cooked oat-meal and dry stale bread may be given once or twice a day; later on, simple broths or soups, with grease taken off, and a soft-boiled egg may be given. Fruits, such as the juice of an orange, baked apples, or soft peaches in season may be allowed towards the end of the second year; but never, under any circumstances, should such articles as candy, cakes, and promiscuous fruits be allowed, for they are the primary cause of illnesses that cause the death of hundreds of infants every year.

CASE OF COMPLETE INVERSION OF THE UTERUS, SEVEN HOURS AFTER LABOR.

By H. E. WOOTTON, M. D., Kempner, Texas.

I report this case because of the extreme rarity of the occurrence of *complete* inversion of the uterus. It is so exceedingly rare that Dorland speaks of it as "undoubtedly the rarest complication of labor." In 250,000 births in the clinics under the charge respectively of Braun and Spaeth, not a single case came to their notice. Lusk, however, mentions that there was "one case in 190,000 confinements at the Rotunda Hospital in Dublin." In general, it appears to be an accident in about the proportion of 1 : 200,000 labors.

During the evening of October 24, 1897, I was called to see Mrs. R. E., white, primipara. She had been delivered of a male child twenty-four hours previous by an old midwife. Finding that she could not remove the placenta in the usual way—it being adherent—she made the patient stand upon her feet out of bed, while she pulled on the cord with all her strength. She thus succeeded in getting away the greater portion of the after-birth; but, according to witnesses, the patient fainted.

She was lifted up and put to bed, and in the course of an hour or so, she was revived.

Six hours afterwards, while in the act of getting up to stool, the entire uterus dropped out, and was completely turned wrong side out. Immediately after placing the patient back in bed, I was sent for, and found her blanched, and suffering excruciatingly, while yet in this state of semi shock. The mass outside the vulva was as large as an ordinary man's head, and the exposed mucous surfaces of the uterus were very much inflamed or turgescent. What the old midwife had done for the relief of the condition, I do not know; but probably after ineffectual efforts with her own hands to replace the uterus or to reduce the size of the mass, she became alarmed and sent for me.

Recognizing at once that it was a case of complete inversion of the uterus, I immediately administered a full dose of morphia sulphate hypodermically, to mitigate the intense suffering, and had a near-by brother practitioner, Dr. B. T. Welsh, sent for to assist me in the case.

We placed the patient under the influence of chloroform, and resorted to various expedients to restore the womb to its normal position, but nothing seemed to avail. However, after about two hours' hard work, we succeeded in getting the uterus restored to its proper place. She rested well that night, but manifest signs and symptoms of commencing septicæmia set in during the next day, and the patient died within the next twenty-four hours. No autopsy.

The history of the case leads naturally to the suggestion that at least partial or incompleie inversion was brought about by the violent traction on the cord by the midwife while the patient was standing. It does not seem that any measure was adopted to see what was the condition of affairs at that time. There must have been efforts of the uterus to rid itself of the remnant of placenta; while, of course, the neck of the uterus remained wide open or extremely patulous until she got up to stool.

It is a point of interest in this case to note that the complete inversion, which developed suddenly, did not occur until six or seven hours after labor.

Neither Dr. Welsh nor I had ever seen a case like it before, and from the statistics given in the books on the subject, it is not probable that either of us, in our practically country or village practice, will ever encounter another case. But I would like to incite other doctors who may have had similar cases to present their experience on the subject.

CHRONICALLY DISEASED TONSILS.*

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It may be truthfully said that, during all seasons of the year, cases of acute follicular tonsillitis exist in the Mississippi Valley. The severity and frequency of the attacks vary, however, with the season of the year and the *individual* peculiarities and susceptibilities of the patient concerning this disease.

The clinical characteristics of *acute attacks* are recognized without difficulty. Patients are treated during the four or five days of attack; are discharged, and we see no more of the disease, perhaps, until a return seizure. Not so, however, is it with *chronically diseased tonsils*, of which we occasionally see a great deal and have with us for a long time.

It is unnecessary to enter upon the mooted question of the function of the tonsils, and their significance, physiologically, in the animal economy. Only after they become diseased and assume a pathological condition will they be of interest to us.

Seriously diseased tonsils are frequently underestimated in importance and left unattended; they cannot be anything but a prejudicial factor, influencing the general health.

Acute tonsillitis usually attacks children of tender age—occurring even in infancy; and generally a profound impression is made upon the constitution of the little sufferers, from which they rally more or less slowly. One attack opens the way for the second, which occurs either immediately or remotely, and with increased severity, often involving the cervical lymphatics which remain enlarged and irritable. Having departed from a healthy condition, under exciting influences, it is easy for them to remain so through the age of childhood to maturity.

Patients who suffer repeated attacks of tonsillitis, are subjected to a variety of annoyances and inconveniences in consequence. Comparatively unimportant they may seem, but, nevertheless, they possess a detrimental influence by preventing a free and easy respiratory action, and cause mouth-breathing, snoring during sleep and night terrors—dreams—in children, and also assist the formation of adenoids in the vault of the pharynx. In these cases the blood is not freely oxygenated, and anæmia, sooner or later, makes its appearance. There is

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also associated with these conditions more or less general catarrh, with irritable and spongy mucous surfaces.

Chronically diseased tonsils may be classified as follows—viz:

Hypertrophic, } Enlargements.
Hyperplastic, } Enlargements.
Lingual, } Enlargements.
Tonsillitis.
Atrophy.

The first two varieties exist under vastly different circumstances. The *hypertrophic* is found oftenest in childhood, and is, consequently, the more frequent of the two. The *hyperplastic* occurs in adult life preferably. In the one there is an hypertrophy of the normal histological elements composing the gland. In the other—the hyperplastic—there is a predominance of connective tissue, which may, indeed, almost entirely change the character of the gland.

In the former, the color is darker, its consistency softer, and, seemingly, there is an abundance of glandular tissue; it usually presents a ragged or uneven surface. As in health, the *hypertrophic tonsil* presents the orifices of the crypts, which, upon inspection, or probing, are found enlarged, and often contain masses of degenerated epithelium scales and mucus. The reddening of the mucous membrane covering the tonsil varies much in the same individual, and largely depends on the length of time which has elapsed since the last acute attack. The mucous surface dips into and lines the cavity of the crypts. The submucous layer is usually thickened by a deposit of connective tissue fibre which surrounds the lymphatic bodies, which, in turn, are often increased in size.

In *hyperplastic tonsils*, there is also observed an increase in the number, as well as in the size, of the lymphatic bodies. But what is more noticeable, is the increase in the development of connective tissue bands which occasionally compress or obliterate the crypts of the tonsils. In the same manner, blood vessels are con stricted and the normal blood supply is reduced, which is sufficient to account for the difference in color, which is paler than in the hypertrophic variety.

The *faucial and pharyngeal tonsils* having the same normal histological elements, it is but reasonable to suppose that whatever exciting causes arouse glandular activity, or produce irritation in the one, is also liable to set up the same activity in the other. Consequently, we often find that adenoids exist in children who, for some time, have had derangement of the faucial glands.

In the variety of *lingual hypertrophies*, much the same conditions obtain, except that the lymphatic follicles are distributed over a broad base instead of being bunched together as they are in the other forms. Lingual enlargements are usually preceded by a history of faucial tonsillitis existing in earlier life. Of themselves they are the least important, and often exist without causing the patient anything more than an annoyance. Following repeated attacks of congestion, there is hyperplastic deposit about the individual mucous glands as elsewhere. These glands can be detected as they stand above the surface over the dorsum of the tongue from the papillæ circumvallatæ to the dorsum of the tongue. They are recognized by the opening of the duct, into which passes the mucous membrane and lines the bulbous cavity of the gland. As elsewhere, in the submucous layers, are placed the lymph bodies enclosed in a fibrinous mesh, enveloped by a fibrous capsule. The bulbous expansion of each mucous gland is surrounded by lymph tissue, which functionates as a separate secreting gland. The abundance of lymph tissue here renders them susceptible to enlargements which appear secondary to the faucial disturbances.

Tonsillitis.—The glandular structure of the tonsils; the enlarged crypts having small openings favor the retention of catarrhal exudates which undergo a degenerative process, forming at first a cheesy mass, but subsequently change through various stages until a calcareous condition has been attained.

In various conditions of diseased tonsils, crystals of lime are occasionally found existing in the body of the gland. They are also found in tonsils externally possessing a healthy appearance, and give no inconvenience. This condition is considered by some as being of a gouty nature. In size, the concretions vary from a crystal to the weight of several grammes. Their composition is made up chiefly of phosphate and carbonate of calcium, with a small quantity of magnesium.

Tonsillor Atrophy.—We occasionlly encounter patients who, from birth, have imperfectly developed faucial tonsils, and they generally escape all forms of congestion and inflammation. In other instances, after one or repeated attacks of acute tonsillitis, the glands become hard and fibrous in consistency, and gradually decrease in size, without annoyance to the patient. The atrophy is often unilateral, but does occur bilaterally. In outlines, these tonsils are usually smooth; are harder than normal, and are pale in color. Occasionally, one

or more crypts become filled with caseous deposit, which accumulates in size, with distension; other lymph follicles are compressed and often absorbed, so that not infrequently the entire body of the tonsil is filled with the degenerating mass, and when removed, the capsule of the tonsil collapses.

Either by fibrino-plastic deposit about the nutritive blood vessel, or by the pressure of the accumulating mass within, the quantity of of blood is reduced, and glandular atrophy occurs as a result; or the atrophy occurs through a neurosis.

To turn out the retained cheesy mass and irritate the sack with the hope of occluding it, is the only treatment indicated.

The causes which induce chronic tonsillitis are *predisposing and exciting.* Under the former, hereditary influence seems to stand forth prominently and demands recognition. In a greater number of cases, it will be found that one or both parents have been victims to attacks of acute tonsillitis. Again, family habit or susceptibility to acute tonsillitis is a thing of record in the observation of every physician. In some families attacks are common, while they never occur in others. The existence of rheumatism and tonsillitis in the same individual has been observed and noted for a long time. Involving, as it does, the existence of a diathetic habit, this theory offers a reasonable explanation, which is worthy of consideration, in investigating the hereditary connection of the disease as a predisposing factor.

Among other agencies which act as *exciting* causes of the formation of this trouble, we may mention first diphtheria, and scarlet fever second. It may be said these diseases almost always leave behind them glandular enlargements about the cervical region. In the same category, but occupying a less prominent position, may be placed measles and whooping cough. As a result of these diseases, a susceptible lymphatic irritability often remains for a long time.

The "*lymphatic diathesis*" has an immeasurably far reaching influence upon the health, growth and development of a child. The vaso-pharyngeal mucous membrane, so abundantly supplied with blood and glandular elements, seems ever ready to respond, not only to a variety of infectious agents through the lymph bodies and glands, but also responds through the nervous system to varying c nditions of sudden changes from heat to cold. However the vaso motors functional activity in the lymph follicles is easily increased, and hyperplastic deposits are made about the mucous glands, as well as around the lymph follicles, during attacks of acute tonsillitis, and the neighboring lymphatic cervical glands are also aroused in the same process. But proliferation and degeneration are favored by the repetition of congestion and depletion; by the vitiated atmosphere or overheated, insufficiently ventilated apartments during the winter months; by overcrowding in working rooms in large cities; by being under-fed and poorly clad; by exposure to atmospheric conditions without adequate means of protection.

Symptoms.—There is usually present a history of hereditary tendency to the disease, and often times there have been repeated attacks of acute tonsillitis during earlier life, with sequent enlargement of the cervical lymphatics, which, often, are tender. There is susceptibility to sudden changes of temperature. During winter months, frequent attacks of coryza or rhinitis occur, from which, in due time, a general head catarrh is established. Vasomotor disturbances are of frequent occurrence.

In the majority of cases, there is present post-nasal catarrh, and a mucous discharge takes place, either through the anterior nose, which, at times impedes nasal respiration, or posteriorly into the pharynx. Being repeatedly congested and bathed in mucus, the pharyngeal tonsil becomes involved with adenoid formation, which assumes a degree of activity depending upon a variety of conditions which usually are not wanting. Such a combination tends to materially aggravate the course of chronically diseased tonsils. About this time, when adenoids are well under way, mouth-breathing begins, and with it a noisy, unpleasant respiration, which becomes a snore during sleep. Children become listless and hear badly; they become anæmic and grow lean and lank. Discomfort is complained of only when the glands become sufficiently large to interfere with swallowing or when the crypts become filled with catarrhal exudative masses. The lower jaw drops, the mouth remains open, the eyes are dull and often congested; the facial expression is heavy or stupid. The respirations are shallow and imperfectly executed; the chest expansion is restricted and the blood is imperfectly oxygenated, which further tends to aggravate the tendency to anæmia.

The voice is flat and nasal in character. Cough is a variable symptom. Inspection reveals the enlarged tonsils, often ragged in outline, red in appearance and granular in the hypertrophic variety. The mucous glands occupying the pharynx are involved and en-

larged, so that the throat presents an abnormal appearance. The pillars of the fauces are frequently granular and congested, and the capsule of the tonsil may be found adherent, a condition it is well to have determined before excision is attempted.

In the hyperplastic enlargements, the tonsils are found to be symmetrically enlarged, usually quite round, hard and pale in color. In the lingual hypertrophic, few, if any, characteristic symptoms are present. Histories of previous tonsillitis are found. Faulty digestion, associated with hepatic inactivity and constipation, is present in the majority of instances.

A slight tickling cough is sometimes complained of, as well as the feeling that a foreign substance has been lodged in the throat. Retained masses are found in these glands, and they have occurred more frequently in women than in men in the writer's experience.

Prognosis.—At about the age of thirty years, the disease is sometimes dispelled by a spontaneous recovery; in children, at the age of puberty. In the meantime, however, the patient's condition may become so unsatisfactory, and much irreparable harm be done if diseased tonsils are permitted to remain; it is desirable to remove them.

Usually, the most satisfactory results follow excision or cauterization, which is advisable whenever the tonsils become subject to too frequent attacks of acute inflammation, or the general health begins to be impaired.

Simple, non-pathological enlargement of the tonsils, without glandular involvement, does not demand surgical treatment unless by their size they become objectionable.

As to the results of excision, the patient, friends and acquaintances—they often have to be consulted—confidently may be assured that the voice will be vastly improved, both in tone and quality; that no deleterious sexual changes or perversity will ensue.

Treatment.—We have to consider the hygienic and prophylactic, local, constitutional and surgical. The activity of an acute attack having passed, the physician attending usually examines the throat, and seeing that the follicles are freed from the deposit in the crypts, and the patient, declaring that he "feels all right," is discharged as cured without further treatment. After such an atack, the tonsils are enlarged, soft and hyperæmic, and without the local application of astringents regularly applied until they return to their normal size, the tonsils remain in a condition favorable for an early return attack.

Victims of tonsillitis, acute and chronic, should be warned against exposure to wet, cold atmosphere after physical exercise or exertion, and especial attention should be exercised in keeping the feet dry during sloppy, wet winter weather by the use of rubber overshoes. Nothing in my experience is so provocative of acute tonsillitis as to permit the feet to remain and become chilled in wet boots and stockings. This fact was forcibly impressed upon me when serving as surgeon aboard one of the United States training ships for apprentices, while at anchor in the lower harbor of New York Bay. During April, the ship, having on board about 150 boys, varying in age from fourteen to twenty years, had wintered in the West Indies where perfect health had been enjoyed. The morning after anchoring, the decks were holystoned and scrubbed, the boys doing the work. The time occupied was about an hour and a half, during which period many were barefooted, while others wore rubber boots, and all were seemingly well. By the time of the next morning sick call, about one-third of the number of the boys were ill with acute follicular tonsillitis in varying degrees of severity.

Flannel should be worn next to the skin. A morning bath in cold water should be indulged in to the waist, if not all over, and followed by a brisk rub. The neck, especially the forepart, and chest, should be douched liberally. The habit of wearing fur boas—so popular with women—neck mufflers, and such neck wraps, should be discouraged. They keep the neck too warm, and make it susceptible to change of temperature. When out in the open air, the mouth should be kept closed, and the normal habit of nose-breathing encouraged as much as possible. Over heated, dry apartments should be avoided, while the sleeping room must be adequately ventilated.

Local Treatment.—The majority of children indifferently bear with, or do not tolerate, local treatment. In older persons, the use of such astringents as the glycerite of tannic acid, ferric alum, or chromic acid, properly diluted, gives satisfactory results. Crystals of ammonia alum inserted into crypts, and there permitted to dissolve, acts energetically to prevent the accumulation so frequently encountered.

Constitutional medication is imperative in anæmic conditions accompanying lymphatic glandular enlargements. For this purpose, iron and iodine, combined in some form, is desirable. As a resolvent tonic, the syrup of iodide of iron enjoys an extensive reputation, applicable to such cases. But, candidly speaking, it must be admitted to be unsatisfactory in many respects. The syrup of hydriodic

acid, in full doses, is always palatable and acceptable to children, and produces results as satisfactory as could be expected. The various salts of mercury should not be forgotten, and with an especial advantage they may be combined and administered with iron. Cod liver oil and the bitter tonics are worthy and demand a place on the list.

The digestive functions should be watched carefully, kept active, and in a healthy condition. For this purpose, it is well to restrict the use of sweets, pastry, and rich salads. The normal secretions should be looked after and maintained.

Surgical Treatment.—In repeated instances, the diseased crypts are constantly filling with the masses of a cheesy consistency, which, at times, become offensive, the tonsils not even being enlarged. The opening of the crypt should be enlarged, the plug turned out, and the cautery point applied at a white heat to each follicle. When the cautery is not at hand, a 50 per cent. solution of trichloracetic acid, carried by means of a cotton plug, wound over the end of a cotton carrier, may be employed to destroy the lining of the sac. The fluid nature, however, renders it necessary that care be used in making applications about the throat. To avoid pain, a weak solution of cocaine should be previously applied to each spot. The inflammation resulting from a thorough application of this kind occludes the follicles so that future return is impossible.

Tonsilliths are treated in a similar manner, and recovery is complete.

In hyperplastic enlargements, excision is the only feasible and reliable method worthy of consideration. It is deemed unnecessary here to detail the methods which are familiar to all for their removal.

In hypertrophic tonsillitis, excision is also desirable whenever it is possible; but occasionally they cannot be removed. In such instances, it then becomes necessary to destroy the offending enlargements by means of the galvano-cautery point. For this purpose, the platinum covered porcelain electrode has been designed and is necessary for the accomplishment of satisfactory results. After swabbing the parts with cocaine solution, one, two or three applications may be made at each sitting, and repeated at an interval of every two weeks.

Lingual hypertrophies are best treated by incision or curetting, followed by the galvano-cautery to each enlargement.

Especial attention should be exercised in correcting any mal-digestion present and in overcoming constipation. For this purpose, the effect of sodium phosphate, blue pill, and podophyllin is superior to almost all others.

The presence of adenoids in children having chronically enlarged tonsils should be anticipated, and whenever detected, removed; for no treatment will prove satisfactory so long as any exist. Permitted to remain, they immediately disarrange the general health and comfort, as well as hinder the growth and development of the child. Thorough treatment is always advisable.

72 *South Grant Avenue.*

SYPHILITIC FORMATIVE OSTEITIS, WITH REPORT OF CASES OF EBURNATION.*

By S. P. COLLINGS, M. D., Hot Springs, Ark.

Gentlemen,—I call your attention to this special manifestation of syphilis in a few words to day, for the reason that very little is said of it in literature. In order that the subject may be presented in as brief a manner as possible, it may be well to review the minute anatomical structure of bone.

You will remember that there is always an outer compact portion and an inner reticular structure called the cancellous tissue—the difference between them being practically only, that the relative amount of solid matter in the compact is greater and the spaces smaller. On cross section and under low power there are seen small openings—the Haversian canals; and these are surrounded by concentric rings known as the lamellæ. Between the lamellæ are numerous small spaces called the lacunæ, and these are connected with each other and with the Haversian canal, and one Haversian system with another by canaliculi. The lacunæ are filled each with a bone cell, which extends its processes into the canaliculi, and it is this cell that brings nutriment into contact with the bone, according to Virchow, and which view, says Gray, has been universally accepted.

Syphilitic formative osteitis may be defined as an inflammation due to the syphilitic poison, or to the results of it, and is characterized by the formation of new bone. It may occur on the surface of the bone beneath the periosteum, within the bone itself, or project in the medullary cavity. Where the node projects into the medullary cavity, it is spoken of as an *enostosis*; when it occurs on the surface, if small,

* Read before the Mississippi Valley Medical Association, in Louisville, Ky., October 12, 1897.

they are called *osteophytes*; and if larger, nodes or *exostoses;* and where the whole bone is involved, it is known as *hyperostosis.*

Formative osteitis results in an *osteosclerosis*, where it involves the bone proper, and is spoken of by some as eburnation, or as a condensing osteitis; and its opposite—rarefying osteitis—results in an *osteoporosis.*

Rarefying osteitis and formative osteitis are very intimately associated, both frequently occurring at the same time very near each other, or the one may follow in the wake of the other. Rarefying osteitis may begin beneath the periosteum, in the Haversian canals, or in the marrow spaces, and consists of the formation of a cellular tissue, very vascular and resembling granulation tissue. This tissue encroaches upon the bone substance, and, with the aid of the large cells called *osteoclasts*, the destruction is brought about, and spaces so formed are called *Howship's lacunæ.* In this way the compact bone may become traversed with irregular, communicating cavities, with ragged walls, while in the cancellous tissue it may become a mass of granulations. This newly-formed tissue may break down, or a sequestrum may be formed by the circulation having been entirely cut off, but where drainage is established or the cause removed by treatment, the tendency is to repair by a formative osteitis. This process of repair begins by the formation of new trabeculæ at the expense of the embryonic cells, and new compact bone is formed. Where there is a formative osteitis on the surface, beneath the periosteum, the Haversian canals are arranged perpendicularly instead of horizontally, as in normal bone, and the lamellæ are formed concentrically around these When the bone proper is attached by a formative osteitis, there results an eburnation or sclerosis. The Haversian canals are filled, or partially so, and the bone becomes very dense and ivory-like. This may grow also on the surface, and may or may not be covered by periosteum. It may even surround the bone and compensate, in strength, to some extent at least, for the loss occasioned by a rarefying osteitis beneath. Formative osteitis may also occur around a gumma of the bone, producing an elevated and eburnated ridge, if the gumma be near the surface, which process here is probably a conservative one. The process of eburnation or hardening may be carried to the point of absolutely solidifying a portion, and thus producing ischæmia and a resulting sequestrum.

This is a brief outline of a condition which may occur either in inherited or acquired syphilis; however, the subject has been introduced, and it will suffice for me now to give the history of two cases illustrative of eburnation.

Case I.—A tall, well developed, muscular German, aged 31, came to me in March, 1889. He gave a history of having contracted syphilis six years before, for which he was treated for a few months; treatment, according to patient's statement, consisted mostly of the iodides. His symptoms were relieved, and he remained apparently well for nearly four years, when a slight swelling appeared on the left tibia, at the junction of the middle and lower thirds. He says the skin was slightly reddened over the swelling, but he gave little attention to it, except to take, irregularly, the iodide of potassium, until about three months before I saw him, when osteocopic pains developed at night. Soon after this two small fistulous tracks opened up, which discharged a thin watery fluid to the amount of a few drops only in the twenty-four hours. Upon examination, I found an exostosis over the spine of the tibia at least three inches long by one and a half wide, the skin being healthy except the two fistulous openings. There was some tenderness and pain on pressure, and the osteocopic pains, which had been gradually increasing, now almost entirely prevented sleep at night. The patient was given a mixed treatment, containing forty grains of the iodide of potassium and $\frac{1}{12}$th grain biniodide of mercury to each dose, feeling confident that in a few days he would be free from pain. One week later, however, the pains were more severe, and the iodide was gradually increased until he was taking sixty grains three times a day with no relief. Then we went a step farther, giving one hundred and twenty grains three times a day, together with mercurial inunctions, but the severity of the pain kept pace with the increase of treatment, which was continued for one month, and then increased to four hundred and eighty grains in the twenty-four hours. This amount was continued for ten days, the patient taking ten ounces of the iodide of potassium during that time, with the osteocopic pains decidedly worse than when treatment was begun.

It was then decided to remove the exostosis. This was done, and to my surprise there were no retained secretions found, no sequestrum; in fact, nothing except solid bone, which was denuded of periostium and as hard as ivory—a true eburnation. To my intense relief, however, the patient had no more pains; the wound healed rapidly, and he remained perfectly well for four years, when I ceased to hear from him.

Case II.—A young man, aged 19, who, without going thoroughly into his history, had inherited syphilis. About three years before I saw him he received a blow on the tibia, from which an ulcer resulted. This ulcer continued until I saw him, and beneath it there had developed slowly, from the time of the injury, an exostosis. There was a history of osteocopic pains at night, but not as severe as in the case reported above. The patient had been at the Springs nearly three months before I saw him, having been under treatment, which consisted essentially of the iodides, mercurial inunctions and baths, with decided improvement in general health; the ulcer had been reduced to one-half its former size, and a partial relief had been obtained from the osteocopic pains. I decided to operate at once, feeling that sufficient trial had been given to internal medication. The exostosis was about the size and shape of a half lemon, denuded of periosteum, but not exposed, and almost as smooth as healthy bone. The bone was found to be eburnated, as in the former case, and his symptoms were relieved as soon as it was removed.

These cases are to me unique, owing to the fact of there being an entire absence of periosteum and the hard ivory-like surfaces, perfectly smooth, except a very superficial erosion, and from the fact that iodide of potassium had no effect whatever in relieving the pain in the first case and very little in the second.

224½ *Central Ave.*

Proceedings of Societies, etc.

MEDICAL AND SURGICAL SOCIETY OF DISTRICT OF COLUMBIA.

Meeting of October 7th, 1897.

Dr. J. Wesley Bovée made an interesting report, as a delegate to the Virginia Medical Society.

Dr. S. C. Busey gave an account of the late meeting of the British Medical Association.

The Election of Officers resulted as follows:

President, Dr. Lewellyn Eliot; *Vice-President*, Dr. W. P. C. Hazen; *Secretary and Treasurer*, Dr. Elmer Sothoron; *Assistant Secretary*, Dr. Johnson Eliot; *Executive Council*, Drs. T. N. Vincent, C Mayfield, W. B. French, E. L. Morgan, and F. B. Bishop.

Dr. F. B. Bishop, the *retiring President, then made his address*, in which he referred with pride to the work of the Society and of its individual members. He spoke of the benefits to be derived from membership in medical societies, and especially of the advantages which the Medical and Surgical Society affords for mutual improvement, both medical and social. He spoke very feelingly of the death of Dr. James T. Sothoron, who, while not a member, has extended courtesies to the Society. He compared the Medical and Surgical Society with other societies, and claimed it was up to the standard of any of them. He urged the members to continue its good work.

Dr. E. L. Morgan read a paper, reporting a

Case of Obstruction of Bowel from Carcinoma.

Discussion.

Dr. Bovée said obstruction of the bowel was a very frequent condition, and depends on a variety of causes. He related the case of a woman in which obstruction with, fecal vomiting for thirty-six hours, was due to the impaction of a gall-stone weighing 13.22 grammes, the extreme diameters of which were 5 cms. and 4 cms, respectively. She passed the stone from the rectum, the vomiting stopped, and made a good recovery. Volvulus and adynamic ileus are frequent causes, and, through the papers of Murphy, Long and Werder, dynamic ileus has recently come into prominence in this respect. He had occasionally been obliged to operate in tubercular peritonitis to relieve intestinal obstruction. Various forms of peritonitis produce obstruction. Tumors of the bowel, ovary and uterus are frequent causes of it, and sarcoma and cancer of the sigmoid are quite frequently found blocking up the calibre of the gut. It is not infrequent after abdominal operations in which considerable areas have been denuded of peritoneum. In these cases intestinal adhesions occur.

It, too, is often the result of constriction of the bowel over strangulating bands due to former peritonitis. The distal end of the vermiform appendix has been found adherent to some distant point, and the bowel obstructed over it. The same has been noticed a number of times with Meckel's diverticulum.

The plan of treatment will depend largely on the cause. Fecal impaction is often found to be the cause, and is best relieved by the use of large enemata given in the knee chest position. In most forms purgatives given by the mouth are liable to aggravate the suffering without assisting in the relief. Volvulus and gall-stone impaction are often relieved by the enemata, as mentioned, but too much delay in any form should not be allowed before resort to surgical interference, especially if fever and distension with weak rapid pulse be present.

Dr. Wm. P. Carr spoke upon the paper, but no report of remarks was made.

Dr. S. C. Busey said Dr. Morgan's opening statement was that this was a case of mistaken diagnosis, and referred to him as being called in consultation. The paper had failed to prove this, as far as he was concerned, as he had seen the case but once and that nine months before death. Fecal accumulation occasionally occurs at the left flexure of the colon. In cases of fecal impaction he had good results from the use of Fruderichshall water, which will dissolve the mass. Glycerin by the mouth, two or three times daily, will also accomplish this end. Many years since, in cases of acute constipation, he had adopted a line of treatment, which had given him as good, if not better results, than any other, and that is an enema of about eight ounces of infusion of senna, injected very slowly. A mistake is made in giving too much medicine by the mouth, and great judgment should be used in the administration of morphia. The diet should be bland and easily digested. Resort to operative measures should not be delayed long. The differential diagnosis is often very difficult.

Dr. C. Mayfield agreed with what had been said, but would insist that though morphia was contraindicated it was generally necessary to administer it, owing to the great suffering of the patient. Enemata are necessary.

Dr. W. H. Atkinson related a case of *impaction in a pregnant woman;* the trouble was owing to an accumulation of fruit seeds.

Dr. E. L. Morgan, in closing, said he differed with Dr. Busey, and believed that an error in diagnosis was made; the patient was suffering from a twisting of the bowel at the sigmoid flexure. At the time this case was first seen, nothing showed the man had carcinoma of the liver and intestines. If a post-mortem examination had not been made, the true condition of affairs would not have been known. Beyond the suggestion that probably Mr. S. had cancer, nothing positive could be stated. It was his opinion now that in February carcinoma of the bowels accounted for his condition diagnosed as fecal impaction; and further, it cannot be proven that this condition did not exist. There is no one uses less morphia than he, and but few would have used as little morphia in this case. Is aware of the opinion of the masses of doctors in regard to the use of opium in these cases. Theory is one thing, and practice another. Is not one of those physicians who let their patients die in agony in order to make a diagnosis, but would let his patient die easy, by giving something to alleviate their sufferings. He spoke of the case of a girl who died from large ulcers of the colon, in his practice, which condition and cause of death would not have been known, except as shown by post-mortem.

Dr. Osler reported an interesting case of supposed appendicitis, which proved not to be on operating. Other physicians reported cases of intestinal neurosis simulating appendicitis. The *Medical News*, of Philadelphia, last spring, gives an account of cases. To those gentlemen who state that per recum and vagina diagnoses in these cases can be made almost as easy as rolling off of a log, will state it is difficult in practice. Has learned that too much medicine by the mouth in these cases aggravates patient's sufferings in attempts to move the bowels.

RICHMOND ACADEMY OF MEDICINE AND SURGERY.

Regular Meeting Held October 26, 1897.

Vice President Dr. Paulus A. Irving in the chair. Dr. Mark W. Peyser, Reporter.

Case of Typhoid Fever Relapsing with Unusual Absence of Cerebral Manifestations, Resulting in Death.

Dr. Jacob Michaux reported the case. It began with the usual symptoms, running on three or four weeks with nothing abnormal. About the beginning of the fifth week, there was a fall of temperature, and convalescence began. A week after, there were decided evidences of intestinal disturbance from an unknown cause, but he suspected imprudence in diet. The patient rapidly grew worse, but (and this was an especial point of interest) there was a singular absence of cerebral symptoms. During the first part of the sickness, she complained of the fear of losing her mind; yet there was no delirium, although there might have been a little incoherence in going to, or awaking from, sleep, which was much less than he had ever seen in a severe case of typhoid. In the relapse, there was a tendency to cerebral complications, the patient being occasionally unable to find the correct word, but she was conscious of it and embarrassed thereby, differing thus from the usual mental symptoms of typhoid. Dr. Michaux explained this absence: he had adopted the habit of allowing the bowels to run instead of checking them, believing that the detritus was gotten rid of, and auto-intoxication avoided. In this case,

there were five or six stools in twenty-four hours, which he allowed to go on until there was complaint of weakness, when he used opium and lead, which acted well. This was during the first attack. During the relapse, the bowel symptoms were marked and serious. The operations were allowed to continue, and the following prescription, which seemed to produce no increase of the diarrhœa, given every four hours: Calomel, one-twelfth grain; bicarbonate of sodium, one grain; and ipecac, one-twelfth grain. This was for asepsis, and to stimulate the liver and eliminate the poison. He believed the unrestrained condition of the bowels accounted for the absence of cerebral symptoms, and, for the same reason, there was little subsultus, although a slight amount of trembling was present when the patient was very sick. It might be argued, and with some reason, that while the course pursued relieved the symptom of detritus, it induced inflammation. Yet when Epsom salt was given in acute dysentery, the congested parts and the tendency to inflammation were relieved. He was not prepared to condemn *in toto* the Woodbridge treatment, but would not employ it indiscriminately.

Typhoid Ulceration and Perforation, with Operation.

Dr Virginius W. Harrison reported the case. Youth, aged 18 years, no previous sickness. He had progressed well up to the twenty-four hours before Dr. Harrison saw him in consultation. On Friday, 22nd, he was attacked by a severe, persistent abdominal pain. Without advice, the father administered a large dose of whiskey. Early the next morning, 23rd, the attending physician was sent for. Turpentine stupes were applied without relief. That night two doses of Epsom salt were given; another early the next morning, 24th. No operation resulting, castor oil was administered, and late in the morning there was one. That afternoon, Dr. Harrison was called in consultation, and diagnosed perforating ulcer with septic peritonitis; prognosis, inevitable death without operation, which he advised. Consent being given, the patient was moved to Virginia Hospital, which he reached at 8:30 P. M., and the operation was done at 10 P. M. Incision was made in the median line, and the perforation, which was easily found, was about the size of a goose quill and in the outer side of the ileum. Fecal matter was oozing from it. The abdominal cavity was full of pus and other fluid; the bowels filled with gas; and suppurative peritonitis was general. The edges of the perforation were trimmed, and it was closed by three sets of sutures. The abdomen was irrigated with normal saline solution, several yards of gauze being inserted for drainage. The patient was put to bed in a condition better than he possessed while on the table. Before the operation, one pint of normal saline solution was transfused venously, which improved the state During the operation strychnine was given hypodermically. The patient soon rallied, became conscious, and conversed. In fifteen minutes, the pulse began to fail rapidly, and venous transfusion was resorted to. Improvement resulted, but the patient soon became so restless as to require holding in bed. He was called to the telephone, but before he could reach it, he was summoned back to find the patient dying.

Fifty-two operations for perforating typhoid ulcer have been reported, with 27 per cent. recovery, and the operation therefore is certainly worth the trial. The low condition of the patient is certainly no more a contra-indication for operation than in suppurative peritonitis or pyosalpinx.

Exaggerated Case of Urticaria with Syncope.

Dr. Mark W. Peyser reported the case. Woman, white; married; aged 40 years; history of gastric and intestinal indigestion and tachycardia, which latter he believed functional. At dinner, the patient had partaken of cabbage —had eaten little or no supper. Soon after dinner, she felt an itching on her left hip, and thinking she had been bitten by an insect, she investigated, but could see nothing except an elevated patch. Following, was a like sensation on the right hip, with like result, it spreading rapidly until the face, trunk and all the limbs were affected, and urticarious patches as large as the palm of the hand appeared. Receiving an urgent call that the woman was dying, the doctor hurried to her bedside to find her recovering from a profound syncope. The patches were intensely congested and stood in relief from the surface about an eighth of an inch, with edges puckered like scar tissue. Nitro-glycerin and strychnine were injected hypodermically, alkaline washes and enemata employed, and bromide of sodium given internally. Itching soon disappeared, and the patient was up and about in three days. The only cause for the syncope that could be given was intense dilatation of the cutaneous vessels, depleting the heart and the internal circulation.

Mechanical Intestinal Obstruction.

Dr. Paulus A. Irving reported the case. The

patient was found tossing in bed from excessive pain. The day before he had been perfectly well, had had a copious evacuation, and ate a hearty supper. An hour after, there were violent abdominal pains, which persisted the entire night in spite of various household remedies. The pain was localized around the umbilicus, and there was considerable gastric disturbance. Enemata brought away only a slight action; but the stomach became easier. Calomel was administered and followed by a saline, which came back. The patient was seen several times during the day, and at night was removed to Virginia Hospital. High enemata were given, but they came back only slightly stained. The patient gradually grew worse, and was finally operated upon. Five or six inches above the ileo cæcal valve was found a band so tightly hugging the gut that when it was severed it made a popping noise. The patient re-acted well; but because of peritonitis and paresis, no evacuation was had until the next evening, and this was produced only after several high enemata. Recovery was uneventful. For a long time the patient had suffered from constipation, and was much emaciated. It was hard to say what produced the inflammation. About ten years ago, he had a similar attack, which must have been appendicitis, and the later trouble might have been due to it. The appendix was not carefully sought.

Book Notices.

Twentieth Century Practice. Edited by THOMAS L. STEDMAN, M. D., New York City. *In Twenty Volumes. Vol. XII.* **Mental Diseases. Childhood, and Old Age.** New York: William Wood & Co. 1897. Cloth 8vo. Pp. 845 ($100 for the Twenty Volumes; $5 a volume as delivered).

The five authors of this volume are all foreign; but they have contributed one of the most readable, instructive and up-to-date books of the "International Encyclopedia of Modern Medical Science" yet published. The well-known author, Dr. G. Fielding Blandford, of London, contributes 254 pages on *Insanity*, which article itself forms an admirable textbook for doctor and for lawyer. Dr. Paul Sollier, of Paris, reviews the subject of *Idiocy* in 114 pages—bringing out the latest of the best information regarding it—devoting a full section on its diagnosis, and another on its treatment. Dr. Cesare Lombrosi's (of Tennessee) article on *Criminal Anthropology* is only fifty-three pages in length, and can be read in an evening. It is of peculiar interest at this time to physicians, jurists, police authorities, and all others interested in the study of criminals and how to prevent crime. It forms an important contribution to the diagnosis of the criminal, which, if well studied by those in civil authority, would oftentimes enable them to foresee the intent and thus prevent the criminal act. According to the author, *criminal* insane asylums should be distinct from the non-criminal. Criminals—whether diseased or not—should be sequestered. They are dangerous to posterity. The expense of maintaining them apart from the non-criminal, "however great it might be, would be less than that to which society would be subjected by the commission of fresh crimes and of new trials which often cost fabulous sums." When incarceration does not suffice for the protection of the honest citizens, he argues in favor of the death penalty as the "foundation theory of the perfecting of the human race by means of the selection and the survival of the fittest." The article on *Old Age*, by J. Boy-Teissier, of Marseilles, covers 108 pages, and is a valuable one for every practitioner. Among other things, the author points out that "in the senile liver, steatosis affects a peculiar form which has not been described" until now (page 504). We would be glad, if space allowed, to reproduce the excellent advice given with reference to administration of anæsthetics when required by the aged. Dr. Jules Comby, of Paris, in nearly 300 pages, gives a most excellent treatise on *Diseases of Children* (excluding infectious diseases and rachitis).

Traumatic Injuries of the Brain and its Membranes *With a Special Study of Pistol-Shot Wounds of the Head in their Medico-Legal and Surgical Relations.* By CHARLES PHELPS, M. D., Surgeon to Bellevue, and to St. Vincent's Hospitals. *With 49 Illustrations.* New York: D. Appleton & Co. 1897. Cloth. 8vo. Pp. 582—xiv.

Brain surgery is deriving much benefit from just such studies as the author has given here. The work is based upon observations of 500 consecutive cases of recent occurrence, and the *post mortem* record of over 300 of them. A large portion of the work directly concerns medical jurisprudence, and is of special value "to the legal profession in more precisely estimating the proper weight to be given to expert testimony in cases of this character." The principle is laid down, and apparently seems sustained by facts, that the immediate danger of an intra-

cranial traumatism is to be measured "by the profundity of shock, the depression of temperature, and the enfeebleness of pulse, and, in some instances, by the extent of visible injury." The usual medicinal agents for cardiac stimulation, as digitalis, glonoin and strychnia, have to be employed to establish reaction. No advantage can be expected from a trephining when the urgent symptoms are the result of a general cerebral contusion. Of course no question can arise in connection with the elevation of depressed bone, and in the removal of foreign bodies from the brain, etc. It is in the treatment of subdural lesions in which the advantage is most problematical. But space is wanting in which to enter into details on this point. The work is of the higher scientific order, and its uses are almost as much in the court-room as in the hospital ward.

Constipation in Adults and Children, with Special Reference to Habitual Constipation and Its Most Successful Treatment by the Mechanical Methods. By H. ILLOWAY, M. D., formerly Professor of the Diseases of Children, Cincinnati College of Medicine and Surgery, etc. New York: The Macmillan Company. 1897. Cloth 8vo. Pp. xvi—495. Price, $4.

This book is on a subject that is too much neglected by authors, and yet on one of almost universal interest. Constipation is one of the most frequent causes of chronic conditions which result in diseases peculiar to women, in hæmorrhoids, and in a great number of other conditions for which the physician is called. It is a very valuable contribution, and, in fact, the only complete monograph on the subject in recent days of which we have knowledge. While medicinal formulæ and directions as to when and how to use them are given in abundance, the author specially impresses the importance of mechanical methods to overcome the trouble. Indeed, even with reference to the treatment of some of the results of constipation—such as fissure of the anus, etc.—he claims that his mechanical methods are curative, and that the surgeon is but rarely, if ever, needed for their treatment. While the author is enthusiastic enough over the special modes he adopts—consisting chiefly of massage, gymnasium exercise, etc ,—and refers to any number of cases and conditions due to constipation which his peculiar methods relieve, he does not absolutely deny the value—even the necessity for resort to other methods than his own—in some rare instances. The practitioner would do well to secure a copy of this book and learn its teachings, and then turn them to practical account.

Text-Book of the Diseases of Women. By HENRY J. GARRIGUES, A. M., M. D., Professor of Gynecology and Obstetrics, New York School of Clinical Medicine, etc. *Containing 335 Engravings and Colored Plates. Second Edition, thoroughly Revised.* Philadelphia: W. B. Saunders. 1897. 8vo. Pp. 728. Cloth, $4 net; Half Morocco, $5 net.

We are not surprised that a second edition of this book should be so soon called for, so excellent and practical a work was the edition of 1894. The author has availed himself of the opportunity to re-write some portions so as to bring all material up to date, and to introduce some new material which will make the volume still more acceptable to the doctor and student. A number of illustrations have been added and a few re-drawn. We would have been glad to have seen those portions published as an appendix introduced in their appropriate places in the text The appendix repeated from edition to edition makes the author appear indifferent as to the matter it contains. We are glad, from a general utility standpoint, to see the special sections given to leucorrhœa and hemorrhage. The articles themselves are practical. The work as it now stands must become the common text-book of colleges, for we know of none its equal for such a purpose.

Tuberculosis of the Genito-Urinary Organs—Male and Female. By N. SENN, M. D., Ph. D., LL.D., Professor of Practice of Surgery and Clinical Surgery, Rush Medical College etc. *Illustrated.* Philadelphia: W. B. Saunders. 1897. Cloth 8vo. Pp. 317. $3 net.

It matters not what medical or surgical subject the author touches, it derives therefrom a new interest. The general practitioner heretofore has paid no special attention to tuberculosis of the genito-urinary organs—not even to its special diagnosis. But now that it is shown to be such a frequent, distressing and fatal affection, and that the modern diagnostic resources employed in the differential diagnosis between tubercular and other inflammatory affections of the genital and urinary organs are made plain and emphasized by so grateful a writer and accurate clinician as Dr. Senn, we may well look forward to some decided advance in the near future. The bacteriology of the tubercular affections is sufficiently dealt with as to aid in diagnosis, as also in understanding of the pathology of the fundamental disease as it affects the parts named. The subject is of special interest to physicians, surgeons and gynecologists.

Incompatibilities in Prescriptions By EDSEL A. RUDDIMAN, Ph. M., M. D., Adjunct Professor of Pharmacy and Materia Medica in Vanderbilt University. New York: John Wiley & Sons. London: Chapman & Hall. 1897. Cloth. 8vo. Pp. 264. $2.

This is one of the most useful books for pharmacist or physician that has recently been published. Part I (101 pages) is devoted to a list of several hundred incompatibilities, arranged alphabetically, and with cross references. Part II contains 325 prescriptions, which, if made up, would result in some incompatibility—either inert or dangerous. Part III analyzes each of these 325 prescriptions, and, in the criticisms, points out the error. On page 240, a table of 31 agents is given, "showing the effect of rubbing together equal weights of two solids"—this list being made up mostly of the newer synthetic drugs. The book is alike useful to the student of pharmacy. Reference to this book by druggists in compounding would prevent many an accident. The book should be on the prescription counter of every apothecary, and on the table of the doctor for quick reference. The Index of Incompatibilities, and also of Prescriptions, are most useful, and appear to be correct. The print is excellent.

Sojourn Among the Oculists of Europe. By FLAVEL B. TIFFANY, M. D., Kansas City, Mo. 1896. Paper. 8vo. Pp. 125. $1. Cloth, $1.50.

This book is not only interesting and to be appreciated as containing portraits of many of the noted men of Europe who have contributed to ophthalmology and otology, but is exceedingly entertaining and instructive as to places and things and persons of note—as all well-written books of travel in foreign lands are. The work is profusely illustrated. Various topics pertaining to ophthalmology are discussed—especially that of cataract. The "Sojourn" also serves as a guide-book to the student going to Europe to prosecute studies pertaining to diseases of the eye, ear, nose, and throat. It is printed on enameled paper, and may be obtained at the price named in the title by addressing the author.

Editorial.

New Bellevue Hospital Medical College.

The ceremony of laying the corner stone of the new college building, corner of 26th street and First avenue, New York city, occurred during the afternoon of November 13, 1897. Mr. D. O. Mills, president of the Board of Trustees, presided. The venerable Emeritus Professor of Orthopedic Surgery, Dr. Lewis A. Sayre, laid the stone. Addresses appropriate to the occasion were made by Dr. Landon Carter Gray, representing the Alumni; Rev. Dr. Roderick Terry, the Board of Trustees, and Dr. John S. Billings representing the medical profession. It will be a fine, commodious building, and ready, with all its appointments, for the Fall session of 1898.

Yellow Fever; its Etiology and Pathology,

Will be the subject of the annual address before the Chicago Pathological Society, to be delivered by Dr. George M. Sternberg, Surgeon-General of the U. S. Army, December 3d, 1897. We anticipate an address of great scientific value, especially in view of recent claims of the discovery of the bacillus of the disease by Dr. Gustav Sanarelli, of Rio Janeiro. It will be recalled that Dr. Priere says that the bacillus of yellow fever has not yet been found.

Dr. Edward Nicholas Niell,

Late Lecturer on Gynæcology in the New York Polyclinic, for many years associated with Dr. H. Marion Sims, of New York, has moved to St. James Park, Jacksonville, Florida, where he will continue to practice, and also continue in charge of the Abstracts to be made for the American Medico-Surgical Bulletin.

Drs Whitehead and Long

Are building a new Sanitarium at Salisbury, N. C., which promises to be an up-to-date hospital building for their private cases of surgery, etc. These gentlemen are too well known as gynæcologists, etc., to need introduction. We wish them abundant success in keeping with their ability.

The Transactions of the Medical Society of Virginia

Of the session held during September, 1897, at Hot Springs, Va., is in the bindery, and will be issued next week. It forms a volume of about 400 pages—considerably the largest ever issued by the Society; and this, too, without the "Prize Essays."

The Western Medical and Surgical Gazette

Is a new 66 large-page monthly, $2, begun November, 1897, in Denver, Col., with Drs. Wm. N. Beggs and Lincoln Mussey as editors. The first number shows up well. Its various departments are under the charge of members of the Faculty of Gross Medical College.

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Original Communications.

SURGERY OF THE GALL-BLADDER AND DUCTS.*

By J. McFADDEN GASTON, M. D., Atlanta, Ga.

Professor of Surgery, Southern Medical College; Honorary Fellow of Medical Society of Virginia, etc.

A division of the bile channels connected with the liver, into the (1) *biliary tubules*, the (2) *hepati*, (3) *cystic* and (4) *common ducts* is generally recognized by surgeons.

The first named collect bile from the acini in the respective lobes of the liver, and carry it through two channels, included with the hepatic arteries and portal sinues by the capsule of Glisson in the transverse fissure. These branches are united to form (2) *the hapatic duct* which meets (3) *the cystic duct* at an inclination varying slightly from a right angle, and they coalesce in (4) *the common bile duct*, which enters by an oblique opening into the duodenum about two inches from the pyloric orifice of the stomach.

The gall-bladder—a temporary reservoir for bile—is a pear-shaped sac about three inches in length, attached to the under surface of the right lobe of the liver; its globular fundus corresponds to the anterior margin of that organ; its neck is directed obliquely backward, terminating in the cystic duct. While this serves as a diverticulum of the hepatic secretion, a portion of this fluid is conveyed directly through the ductus communis into the duodenum. The passage of chyme over the papilla at its outlet serves as a stimulus for the discharge of the bile accumulated in the gall-bladder, so that this becomes mingled with the alimentary mass in the jejunum.

Bile collects in the gall-bladder during intervals of digestion. Its evacuation may be due in part to mechanical pressure of the distended stomach against the sac on the under surface of the liver.

Normally bile is not found in the stomach; its regurgitation into that organ interferes with digestion; but when commingled with pancreatic secretion in the duodenum a salutary influence is exerted in the assimilation of the food.

Notwithstanding elaborate investigations upon the functions of the liver, and the rôle of bile in the digestive processes, there is still great discrepancy in the opinions of physiologists and clinical observers as to the office of this product in the intestinal canal.

The painstaking experiments of Legg as to its province in the processes of digestion led him to the conclusion that "the only office which remains to it is that of emulsifying fats and changing starch into sugar." But this inference is neutralized to a great extent by the weight of clinical experience in regard to its important agency in intestinal digestion.

The clinical study of biliary derangements contributes more to a proper interpretation of the surgical pathology of the gall-bladder and ducts than inferences from physiological experiments have done; and it is incumbent upon the investigator to duly weigh not only the effects of retention and diffusion of biliary elements, but the grave consequences of the entire loss of bile to the physical organization.

Harley claims that "the uses of the bile cannot altogether be dispensed with, for animals with a biliary fistula invariably lose flesh, become emaciated and weak. The hair falls off, the bowels become irregular, while at the same time a great and almost constant discharge of foul-smelling gases takes place from the intestinal canal. At length, after a shorter or longer period, the animal sinks and dies."

Dr. James Johnson delineates in graphic terms many important modifications of the system connected with the derangement of the hepatic function, while he holds that, "the consequences of the want of bile in the alimentary canal are truly momentous."

*Original abstract of paper presented to the Southern Surgical and Gynecological Association, at its meeting on November 9, 1897, in St. Louis, Mo.

Murchison set forth prominently the effects of disordered secretion of the liver, and the serious results upon the general health of any interruption in the supply of bile to the intestinal tract.

Bartholow, in his profound essay upon *Diseases of the Liver*, insists upon the importance of bile in nutrition, and the marked influence on nutrition of its absence from the process of digestion in the intestine; he points out the manner in which this diversion of bile interferes in the digestion of certain substances.

It is not improbable, however, that in some cases of temporary stoppage of the duct, either from concretions or hardened mucus, there may be dislodgment of the obstruction with an evacuation of the contents of the sac. Again, there may exist inflammation of the tissues of the duct without adhesion of its walls, and the swelling and turgescence may disappear, so that the canal is restored to its normal state, and serve to convey the bile to its proper destination in the duodenum. Should these results not come about with medical treatment, it becomes necessary to evacuate the distended gall-bladder by operation, with a view to establish either an external outlet, or by catheterization of the tract from the sac into the duodenal canal.

The subsidence of inflammation may thus restore the natural discharge; under such favorable conditions the external opening may be closed, obviating a fistulous outlet. This fortunate result in securing against the waste of bile, relieves this process of a most serious objection as a radical operation.

It is requisite for the successful issue of any operative procedure, that a communication with the alimentary canal shall be established; and the temporary discharge of bile by an external opening, with a view to subsequent restoration of its natural channel and ultimate closure of the fistulous outlet, is not liable to the grave consequences of a permanent waste of the biliary secretion.

When the common bile duct remains impermeable an artificial connection of the gall-bladder with the duodenum has been proposed. The claim of this cholecysto-duodenal communication to consideration rests chiefly upon the great importance of bile in the digestive and assimilative processes, during the passage of food through the upper portion of the small intestine.

The entire removal of the gall-bladder in cases of atrophy or degeneration of its tissues has been resorted to without serious interference with the biliary functions, except that the bile flows directly through the common duct into the duodenum instead of having a portion reserved in the storehouse by the wayside for future use.

There is, of course, a departure from the normal state in the delivery of bile continuously into the duodenal canal, instead of the physiological proceeding of retention for certain periods in the sac, and then being poured out as requisite for intestinal digestion. Yet, it is inferred that under the change of relations in the bile-producing act, the discharge adapts itself to the natural demand for it, and experiments have proven that the ductus communis become endowed with a retentive power by the spontaneous contraction of its outlet for certain periods in the intervals of digestion.

The continuous discharge of bile by a direct outlet from the gall-bladder into the duodenum, when the common duct is entirely occluded, certainly fulfills the ends more satisfactorily than the formation of a cutaneous fistula for its escape externally. At least this is the nearest approach to a normal supply of biliary secretion, which can be provided under the circumstances, and thus relieves all the embarrassments of the situation.

My investigations in regard to the surgical relations of the gall bladder to obstruction of the ducts appeared the *Atlanta Medical and Surgical Journal* for August and October, 1884, and September and November, 1885; in the *Southern Medical Record*, March, 1885, in the *Medical and Surgical Reporter*, September, 1885, and the *Proceedings of the Medical Association of Georgia*, 1886. But my most elaborate papers were published in *Gaillard's Medical Journal*, October, 1884, under the title of *Obstruction of the Gall duct and its Bad Consequences, with Remedial Operation Suggested*, and in the second volume of the *Reference Handbook of the Medical Sciences*, with the captions of *Cholecystectomy*, *Cholecystotomy* and *Duodeno-Chollecystostomy*, and the recent supplement with title of *Surgery of the Gall-bladder and Ducts*. The last named articles furnish the basis for the operative measures herein presented.

When the common duct becomes partially or entirely obstructed at its outlet, while the hepatic and cystic ducts are open, there is an accumulation of bile in the gall-bladder. This may lead to a dilatation of its walls, with inspissation of the fluid contents or a deposition of concretions. Yet there is generally a marked diminution of the secretion of bile following the arrest of its discharge into the duodenum, and eventually the liver ceases to yield any secretion; so that a stasis exists in the bile-producing process.

It is a well ascertained consequence of occlusion of the cystic duct for any considerable period, that various abnormal collections in its cavity ensue, such as glairy mucus, pus or seropurulent exudations. The presence of gall-stones in the ducts or intermixed with the accumulation in the sac, may complicate such cases; and simple evacuation of the contents does not ordinarily afford permanent relief.

The prime question for consideration is the practicability of adopting any measure of treatment which shall restore the function of the liver and preserve the office of the gall-bladder. In case the derangement should prove to be irremediable, *excision of the gall-bladder* is indicated. Under such conditions attention may be appropriately directed to the radical operation of *cholecystectomy*, first practiced by Von Langenbuck and since by other European surgeons.

The dissection of the adherent layers of the sac from the under surface of the liver does not seem to be called for in excision of the gall-bladder. In one of my canine experiments the outer wall of the sac underwent disintegration, while the adherent tissue was still firmly united to the under surface of the liver. Since separation of this layer from the proper structure of the liver gives more trouble than any other step in the operation, it may be left attached after trimming off all the loose wall of the gall-bladder, and thus materially simplify the surgical procedure in cholecystectomy.

There is, doubtless, a tendency on the part of advocates for different operations to undervalue the final cause in the respective cases. Excision or extirpation of the gall-bladder is not expected to supply the place of other processes for correcting its disorders, but is a *dernier resort* in view of the inadequacy of any means for restoring the functions of this organ and for rehabilitation of the surrounding structures.

When the gall-bladder and cystic duct become obnoxious to adjacent tissues so as to cause local disorders and general derangement of health, it is the legitimate province of surgery to extirpate them forthwith. They no longer subserve the ends for which they are provided, and constitute an abnormality in the economy. Their removal is, therefore, rational and philosophic. This principle is generally adopted for the obliteration of cysts, and when degeneration of structure with decomposition of the contents of the sac is found in connection with occlusion of the gall-bladder, it belongs properly to the category of cysts, as it has no longer any of the capacities of a receptacle of the bile.

This operation is not warranted in cases of temporary obstruction of the cystic duct, which admits of relief by mechanical or other means, excepting when disorganization of the structure of the sac is imminent. In permanent obliteration of the cystic duct, though the structure of the gall bladder, up to the time of an exploratory operation, be intact, it is reasonable to infer that degeneration will ensue, so that it becomes a legitimate proceeding to excise it.

Cholecystotomy includes operative measure for relief of disorders of the gall-bladder, without excision of its tissues, independent of puncturing or incising the sac through the walls of the abdomen, for the discharge of fluid collections.

Hepatic abscess does not fall within the scope of this paper; yet, when the biliary channels become affected from obstructions, with the presence of inspissated bile or concretions in the gall-bladder, a consequential abscess may form in the liver. Ziegler states that the irritant will first affect the walls of the ducts and their surroundings, and set up inflammation there. Stones formed in the gall bladder and in the ducts themselves are frequently discharged into the intestine through the common duct. But if one of them lodges or lingers in the duct retention of bile ensues, and this may give rise to dilatation of the ducts and to infiltration of the liver with bile. The liver tissues may thereupon become degenerate or inflamed, while the parts around the impacted stone become also inflamed or even ulcerated. When such an inflammation of the ducts persists for a long time or leads to a persistent retention of the bile, inflammatory changes extend to other parts of the liver. Brown or yellow granular biliary concretions appear in the interlobular tissues and within the lobules. The liver cells perish at various points, and inflammatory infiltrations appear within the lobules and terminate in abscess or fibroid induration.

Independent of this record of pathological changes connected with biliary derangement, it has been noted by other trustworthy observers that closure of the natural outlet of bile brings many troubles in its train. Most frequently the progress of dilatation in the gall-bladder, with the consequent suppurations and disorganization in the surrounding structures, indicates the serious nature of the disorder.

While spontaneous perforations do not pertain to this surgical procedure, it is not out of place to refer to an interesting report upon affection of the gall-bladder tending to result in

cutaneous biliary fistula by Kemper in the *Transactions of the Indiana State Medical Society*, 1879.

The aim of surgical interference is to arrest the march of the disorder, and to accomplish a cure.

In the absence of fistula and adhesions, when the history, progress of the disease, examination of the patient, and above all, the presence of biliary tumor, and exploratory puncture reveal the presence of biliary calculi, Bockel recommends cholecystotomy, but holds that this operation is not otherwise justifiable. On the contrary, it is clear that we arrest the progress of inflammatory disturbance in the tissues by evacuating the distended gall-bladder. Delay in undertaking the appropriate measure of relief brings disintegration of structure, which undermines the recuperative powers of the system; and this tendency to disorganization may be arrested by an early recognition of the nature of the case and a timely resort to a judicious operative measure. The earliest record of a radical operation for relief of the gall-bladder is that of Bobbs, June 15th, 1867, upon a lady thirty years old. The gall-bladder was emptied of its limpid fluid contents and several solid concretions—the incision in its walls being stitched and the ends cut close, while the sac was returned into the abdominal cavity. Her recovery was rapid and without an untoward symptom.

The practical outlook was not improved by the untoward results of the radical proceedings of Sims and Keen in their cases of dropsy of the gall-bladder. The condition of the ductus choledochus is not reported in the autopsy of Keen's case, but it is inferred from the post-mortem examination in the case of Sims, that obstruction of the common duct did not exist.

Encouragement has been drawn, however, even from these failures, for a repetition of similar operations, and notices of the steps taken in other cases by various operators are reported (*Amec. Jour. Med. Sci.*, January, 1879, by Keen, and in October, 1884, by Musser and Keen.

According to Musser, the four pronounced conditions, which are dangerous as sequences of biliary obstruction, and which may be looked upon as indications for operative interference, are *jaundice*; a *tumor* in the right hypochondrium, presumably an enlarged gall-bladder; frequently *recurring paroxysmal pain;* and *symptoms of suppuration.*

The *causes in general of stenosis in the bile-ducts* are considered to be three: 1. Foreign bodies within the ducts (gall-stones, parasites, etc.) 2. Diseases of the walls of the ducts (*a*, congenital; *b*, adhesive inflammation or cicatrization of ulcers; *c*, parahepatitis.) 3. Tumors, etc. external to ducts.

Enlargement of the gall-bladder is generally pyriform in shape, or it forms a semi-globular or globular tumor, and is unusually movable, tender, elastic, and fluctuating, but may have different qualities, and the intestine is never in front of the growth.

Acupuncture and aspiration in advance of opening the abdomen are advocated by Keen for diagnosis of affections of the gall bladder, but resort to such exploratory punctures are not sustained by general experience; yet other prominent men concur in the propriety and expediency of this course. Bartholow claims that this diagnosis can be reduced to an absolute certainty, while Harley insists strenuously upon its safety and efficiency. Being satisfied that this preliminary step is not requisite for the practical management of such cases, and that unforeseen risks attend the modes of exploration, while safer means of investigation may be relied upon, I cannot acquiesce in this measure for detection of gall-stones in the sac, or for the removal of its fluid contents, in preference to an exploratory incision and examination with the finger. While recognizing the preliminary process, exploratory operations are sanctioned by Keen, and if the ascertained conditions warrant further steps, they are to be followed by cholecystotomy. He inculcates as a rule, that the incision should be made over the center of the tumor and parallel to the free border of the ribs. The greater facility of access to the tumor overbalances, in his estimation, any less hemorrhage from the linea alba. It should be sufficient for exploration for the incision to be made about three inches in length, and enlarged, if need be, afterwards. All bleeding should be arrested by hemostatic forceps or catgut ligatures before opening the peritoneum. This being done by incision upon a director to avoid wounding the sac, two fingers should be used, or if necessary, the whole hand, to explore the condition of the various abdominal organs and learn the exact nature, attachment, etc., of the tumor; and so far as possible the character of its contents. The cystic and common ducts are to be examined to determine the presence and situations of gall-stones, with their size, shape, and mobility. If any be found in the ducts, the suggestion of Handfield Jones to endeavor to push them into the duodenum should be tried. This failing, we should endeavor to push them back into the gall-bladder, as this part of the duct

has already beeen dilated by their own passage.

It is not always practicable to find all the stones at the outset, and those not encountered at the operation have escaped subsequently or have been extracted by the operators. This shows the propriety of exploring the cavity of the gall-bladder and the cystic duct on dressing the wound, during the first week after an operation.

The first case of Parkes is very instructive; in his graphic account of it, January 27th, 1895, I was informed that an exploration of the cavity of the gall-bladder on the occasion of the operation failed to find any stones in the bladder. On the second day, the dressings were charged with a profuse flow of greenish-colored fluid from the fistula. On the fourth day, again dressed; while probing the bladder he detected and removed two stones. On the seventh day, he removed five stones, one as large as the end of the finger. None were found subsequently. He was satisfied that contraction of the common duct existed, rendering it too small in caliber to carry off the biliary secretion, and that for the time being the fistula would have to be maintained open.

Had this been evident on passing the sound, Parkes might doubtless have adopted the suggestion in the October number of *Gaillard's Journal*, that "in case any communication with the duodenum exist, however small it may be, dilatation of the ductus choledochus should be attempted."

Notwithstanding the assurance of Parkes that his finger in the abdominal cavity guided the sound through the cystic and common ducts into the duodenum, and the statement of Sims in the autopsy of his case, that "Ganal was able to pass a probe from the gall-bladder through the ductus communis choledochus into the duodenum," (*Med. Bulletin*, pg. 100, April, 1885) Bartholow questions the practicability of catherization and consequent dilatation of these ducts. While I encountered this difficulty in the post mortem of a dog (*South. Med. Rec.*, March, 1885, pg. 83) numerous other examinations were made in dogs, presenting no obstacle to the passage of a sound from the gall-bladder through the cystic and common ducts into the duodenum. While a straight metallic probe may not pass readily from the cystic into the common duct, there is no embarrassment in carrying a curved sound or an elastic bougie from the gall-bladder into the duodenum; hence, in cases of partial constriction of either duct, the successive use of graduated sounds or bougies may be relied upon for dilatation of the passages.

With the lights before us, it is clear that an effort should be made to overcome temporary obstructions of the ducts; and if concretions exist which cannot be removed in either direction by pressure from without the canal with the fingers, an effective recourse is found in adopting the expedient of Tait for crushing the masses with padded forceps, and leaving the fragments to be flooded out by the bile. This suits cases not requiring incision of the sac, but he is in favor of establishing a biliary fistula temporarily, and a large fenestrated drainage-tube should be inserted, while the whole abdominal wound is securely closed excepting at the opening for the attachment of the incision in the sac. A compress and bandage should be used to obviate any tendency to ventral hernia after operation.

Keen also regards the creation of a biliary fistula as the better practice, yet in case a probe could be passed into the duodenum with a reasonable assurance that all stones have been removed, closure of the gall-bladder by Gèly's suture or otherwise might be done with propriety.

In comparing different measures adopted by surgeons for the relief of a distended gall-bladder, their relative advantages depend upon the greater or less probability of restoring the bile to the intestines.

Whatever may be the properties of the bile, it would seem to have been designed for a useful purpose by admixture with the chyme soon after leaving the stomach, and in combination with the pancreatic secretion enables the lacteals to take up the nutritive elements of the food. While serving as an antiseptic, it also promotes the peristaltic action of the intestines.

If a stone remain in the cystic duct the sac will be refilled with its own secretion, and if in the common duct by bile; but should all the stones be removed and the ducts be pervious, the fistula will soon close under the use of drainage through the duct into the duodenum.

Should bile be certainly restored to its natural channel by antoperation, the closure of the incision in the sac and dropping it into the abdomen, with complete suture of the external wound, are advisable.

Besides the case of Bobbs, in which only one stitch was used to close the incised sac, those of Courvoisier and Bernays, operated on by this method, have proved entirely satisfactory. Even the fatal case of Meredith, in which the incision of the gall-bladder was closed with the continued suture and dropped into the abdominal cavity, proved the feasibility of immediate

closure under favorable conditions. In the succinct report of it forwarded to me February 11th, 1885, the author states that this patient died in forty-eight hours with suppression of urine. "At the autopsy the incision in the gall-bladder was found securely closed, and quite impervious to fluid."

The case of Dr. Courvoisier died from pneumonia two and a half months subsequent to operation; the autopsy showed a perfect union from the suture of the incised wall of the gall-bladder.

There are some cases, in which complications exist, that preclude the completion of an operation which has been undertaken, such as extensive disorganization, the agglutination of tissues or the evidences of malignant disease. Of the last Senn reported an interesting case to me on February 11th, 1885, with the remark, that it is sometimes more important to report unfavorable than favorable cases. A parallel case to this has been reported since in Germany, and though, as Senn states, primary cancer of the bile-duct is an exceedingly rare occurence, scirrhus of the pancreas and pylorus often involves it in the disease.

Some instructive notices of the great advances made in operative procedures for disorders of the gall-bladder, appeared in *Medical News*, December 20th, 1884, and February 14th, 1885.

When the outlet of the common bile-duct is permanently closed, and the bile finds its way from the hepatic duct through the cystic duct into the gall-bladder, the most philosophic proceeding is to effect a direct passage of the bile from the gall-bladder into the duodenum.

In my first series of experiments upon dogs for testing this union of the gall-bladder and duodenum, a circular row of catgut continuous suture attached the serous membranes around an elastic ligature connecting the two walls. This was done under the impression that it was requisite to excite adhesive inflammation, by which the surfaces should become agglutinated. But it was productive of undue disturbance, and in the last case of that series it was observed that sufficent inflammatory action ensued from the insertion of a single stitch of silk thread to unite the walls of the gall-bladder and duodenum.

With the further observation that this loop cut an opening between the two cavities, in case an incision be made into the sac for exploration, it may be closed by Lembert's suture separate from the parietes of the abdomen; and the external wound may then be sutured throughout without any provision for drainage, as the bile passes very soon through the apertures of the thread and ultimately through the fistula.

With a view to *diagnosticate distension* of the gall-bladder, all tumors connected with the liver should be examined with care. A peculiarly complicated case of laparotomy is reported by Bauer (*St. Louis Med. and Surg. Jour.* June, 1886), in the person of a mechanic, aged forty. This case was calculated to mislead the operator, in view of the fact that "immediately below the right hypochondrium there was a tumor obviously connected with the liver, since it moved contemporaneously with that organ. It presented a semi-globular form, about three inches in diameter, was smooth and elastic to the touch, and withal very tender." The author leaves us entirely in doubt as to his preconceived view by saying that although he had formed some diagnostic views on the nature of the tumor, believing that laparotomy is the only trustworthy diagnostic method, he proceeded to operate. (Query—What does an analysis of the facts prove? Abscess of the liver.)

A paper read by Keen before the Philadelphia Academy of Surgery November 2, 1885, presents some interesting points bearing upon the relations of the duodenum to the gall-bladder and liver.

An interesting case of fatal obstruction of the ilio-cecal valve by a gall-stone was reported by Dr. Russell H. Johnson in the *Medical News* of June 27, 1885. "The facts of the case warant the conclusion that the gall-stone under consideration escaped from the gall-bladder by means of a fistulous tract connecting it with the duodenum," and remarks further that "autopsic examinations (especially those made by Murchison) have in many instances shown the presence of these fistulas and lead us to infer that it is not a very unusual occurrence."

A very instructive report to the New York Surgical Society, at its meeting of April 28, 1885, by Dr. Peters, detailing the results of an autopsy, illustrates strikingly this ulcerative tendency from occlusion of the gall-bladder and the accompanying adhesions surrounding the perforation into the duodenum by which nature provides an outlet from the gall-bladder into the duodenal canal.

It is evident that the slow progress of such cases at the outset, and the gradual concretion of hard masses in the gall-bladder, favor the development of a subacute form of inflammation, which leads to suppuration in the sac and ulceration of adjacent tissues. The inflammatory action which is sometimes set up in the

tissues of the gall-bladder seems to point to relief in the direction of the duodenum, and an autopsic observation of the ulcerative process by which the contents of the gall-bladder passed into this canal first directed my attention to the practicability of effecting a direct communication between these two organs.

No measure apart from that of Von Winiwater had been adopted previously with a view to convey the bile from the gall-bladder into the intestinal canal. In his case the gall-bladder was first united to the colon, and after the lapse of some time he established a fistula between the sac and the small intestine by uniting them with stitches, suturing the intestine to the abdominal wall, and opening the gut on the fifth day, puncturing the opposed surfaces through the incised intestine, and finally closing the latter with sutures. This operation of Winiwater was intended to remedy the occlusion of the common bile-duct by effecting an artificial communication with the intestine for the passage of the bile, and while it failed to realize the advantages expected from a cholecysto-duodenal outlet, the partial success of this procedure shows the tolerance of similar measures by the respective structures involved. No complications arose in Winiwater's case from the coils of intestine, the constriction of its lumen, or the regurgitation of its contents into the gall-bladder; and much less are such difficulties likely to occur in the attachment of the sac to the duodenum.

The practical discernment of Harley led him to the conclusion that the triumph of operative surgery would be to establish an artificial fistula between the gall-bladder and the duodenum. For then not only would the pent-up bile be removed, but the disturbance arising from the non-admittance of bile into the intestines likewise be at the same time overcome. I am not quite sure, he remarks, if, in these days of antiseptic surgery, the operation is not quite practicable; for I can see no reason why the adjacent surfaces of the gall-bladder and duodenum should not be eroded by potassa fusa and speedily stitched together.

The principle of cholecysto duodenal communication seems to have been grasped in the suggestion for creating a fistulous opening; but the process of accomplishing it presents objectionable features, which do not hold against the plan of uniting the two walls by a loop of suture which shall induce an amount of adhesive inflammation sufficient for the union of their outer surfaces, with a certainty of cutting through the adjoining tissues and effecting a passage for the bile from the gall-bladder into the duodenum.

Harley is justly entitled to priority for the publication of this suggestion "to establish an artificial fistula between the gall-bladder and duodenum," as his book on Diseases of the Liver, which contains it, appeared prior to the publication of my article in *Gaillard's Journal* on "Obstruction of the Gall-duct and Its Bad Consequences, with Remedial Operation Suggested." But it is due to myself to state that his work had not been seen, nor was I aware of his suggestion when my paper was published. In like manner it may be stated that I did not know of the operation of Winiwater, though it was recorded in a foreign journal in 1882, and published in the October number of the *American Journal of the Medical Sciences* for 1884.

But, putting aside the question of priority, it is proper to note the difference in a predetermined recourse to the ligation for opening a communication from the gall-bladder into the duodenum, which shall at the same time induce a firm union of their outer surfaces, from an incidental attachment of the sac to the large or small intestine, as done in his case. It must be perceived that his mode of proceeding has quite a dissimilar effect from the operation that was suggested by Harley, or from that process which I adopted afterwards for establishing the flow of the bile into the duodenum, which McGraw has indorsed.

The close proximity of the duodenum to the lower and under surface of the distended gall-bladder, with more or less thickening of its wall, affords favorable conditions for this operation; and it is evident that greater tolerance of the textures for surgical interference is presented after the disorders connected with biliary obstruction have diminished the tendency to active or acute inflammation.

A class of operations calls for attention in connection with impaction of biliary calculi in the cystic or common ducts which cannot be dislodged by the means already mentioned. The incision of the wall of the duct by the knife or scissors, constituting this operation for the removal of stones, has in most cases been closed afterwards by suture, but when this is impracticable it may be left open and the intervening space should be packed with gauze, leaving the ends protruding at the external wound, to afford drainage and prevent the entrance of bile into the peritoneal cavity.

The various modes of procedure adopted by different operators in effecting cholecystenterostomy include anastomosis of the gall bladder with the duodenum, the small intestine and the colon, by different processes besides that of union by a stitch of silk thread or the elastic ligature.

The attached surfaces have been sutured, with the cut edges brought together or the division made after nearly completing the circuit. The bone-plates have been employed to approximate the walls of the gall bladder and intestinal canal, and the Murphy button has latterly been used in most cases for this anastomosis.

There has been a fair measure of success by each of these procedures, and the choice of operators in the future will depend to a considerable extent upon the conditions presented in the individual cases.

NEURASTHENIA.*

By FRANCIS B. BISHOP, M. D., Washington, D. C.,

Director of Electrotherapeutic, Clinic Eastern Dispensary; Ex-President Medical and Surgical Society of the District of Columbia; Ex-Vice-President American Electrotherapeutic Association.

From various causes affecting the higher nerve centres, the disease known as *neurasthenia*, or *nerve exhaustion*, may result, giving expression to an unlimited number of symptoms, physical and mental, which may simulate one or more of the very serious organic diseases. It is my purpose to report a few of such cases to-night, some of which are not unfamiliar to two or three of the members of this Society.

The *first case* is, according to Dr. Beard's classification, one of "*sexual neurasthenia*," and is very interesting from the fact that his general mental condition was such that, legally, he would have been considered thoroughly responsible for his actions. He was, naturally, an intelligent man, and confided in no one but his physician as to the terrible obscessions that almost took possession of him, from time to time, in the form of a sudden impulse to kill his own child. The case is briefly as follows:

A young gentleman of twenty-eight, presenting the appearance of one in fairly good health, addicted to masturbation in early youth, was married shortly before consulting me. He used tobacco freely, and gave a history of excessive indulgence in sexual intercourse. He complained of dizziness during the day, a twitching of muscles of the extremities at night, which would come on just as he was dropping off to sleep; he would awaken with the most violent palpitation of the heart. These conditions would frequently keep up during the better part of the night, almost exhausting the patient before morning, and rendering him quite useless for his daily work. By abstaining from his excesses, and by the use of the galvanic, faradic and static electricity, he soon recovered.

Eighteen months later, he called upon me again, stating that since he had seen me he had become the father of a baby boy, which was, at that time, about one year old. His old excesses gradually returned, and with them his old symptoms to an exaggerated degree. While sitting quietly in the midst of his little family, he would be suddenly impelled by a diabolical impulse to murder his own little baby. The sight of a knife or any sharp instrument would suggest the idea; then the morbid impulse would urge him to carry out the suggestion, and it was only by the most extraordinary exercise of the will that he would force himself to leave the presence of the child to keep from yielding. There were no hallucinations in this case, nor delusions, but impulses closely approaching those of insanity; but his powers of reasoning and of the will were mercifully spared, and thus was averted the most horrible infanticide, followed, perhaps, by suicide. Abstinence from excesses, tonics, baths and electricity completely restored this gentleman, and now a period of ten years has elapsed. There are several children in the family, and there has never been the slightest suspicion of a return of his trouble.

The *second case* is interesting from the fact that this gentleman was the subject of hallucinations of hearing, accompanied by suicidal impulses. The case was as follows: A gentleman of intelligence, forty two years of age, of fine physique, standing full six feet, had indulged excessively in sexual intercourse before marriage. Since his marriage, which occurred about fifteen years before consulting me, his excesses have continued. He began to suffer about two years after he was married; at that time, he was a perfect giant, weighing 210 pounds; from this, he was reduced to 160 pounds, pale and haggard in appearance, obstinately constipated. He complained of soreness upon pressure over the entire abdomen, frequent desire to urinate, soreness in prostatic urethra, headache, and constant aching in the back, weakness in the legs, with absence of patella reflex on both sides; he could not stand with both feet together with eyes closed; memory was poor, he could not concentrate his mind upon his business; he was losing confidence in his business ability; had poor appetite and bad digestion; insomnia was a marked feature; his thoughts were constantly on himself; he was often very despondent, and frequently threat-

* Read before the Medical and Surgical Society of the District of Columbia, Nov. 24, 1897.

ened to end his misery by suicide. He claimed that voices, at times, whispered to him, especially when shaving, to cut his throat; he believed that he had cancer of the bowels, locomotor ataxia, etc., and that he was becoming insane. I could easily explain away his fears —the hallucinations, delusions, and morbid impulses, were never considered by him anything but subjective phenomena, arising from his exhausted state; his reason held him on the safe side of the border land of insanity. The local symptoms were weeping penis, emissions during defecation and without erections, sweating testicles, sweating hands, very irritable urethra, which caused extreme prostration if the sound was passed for an inch beyond the meatus. Twelve years have passed since I first met this gentleman, and he is now well, and has been so for the last five years. His treatment was the use of tonics and electricity, and abstaining from sexual intercourse.

Here we have two cases—one with homicidal impulses, and the other with delusions, hallucinations and suicidal impulses. Both of these gentlemen were splendid business men; and while it required the most extraordinary effort upon their parts to perform their daily duties, yet they were performed in a most satisfactory manner.

It seems a hard matter for the lay and legal mind to grasp the fact that a man may be so mentally deranged as to kill himself or some one else, whom his morbid impulse or insane hallucinations may suggest, and that the dreadful deed may be the first evidence manifested as to the patient's real condition. If a homicide has been committed, and the poor unfortunate's attorney puts in a plea of insanity, the doctors who have known him best, and are familiar with his past history, are willing to testify that such an act could proceed only from insanity. Other experts, and many from the rank and file of the profession, are willing, from a few examinations of the patient in his cell, to go upon the witness stand and *swear* that the man is not insane. Expert medical testimony has a tendency rather to confuse than enlighten a jury, and causes a smile of derision instead of the respect that it should deserve.

The next case has been published in an article, read in Boston before the American Electro-Therapeutic Association, under the title, "*The Static Cage, and its Uses.*" This case was directed to my care, through the kindness of Dr. C. M. Hammett, of this city. She was the wife of a physician, and four years ago, while riding a young horse, near her home, in New York State, was thrown, and received the full force of the fall upon her back. Paralytic symptoms soon followed, with intense pain and irritation of the spine. She remained in bed for the better part of three years. Cerebral, as well as spinal exhaustion developed. She was eventually taken out and put into a Meig's suspension chair, and she improved slightly, so that she could, by the aid of the chair, move about the house.

One morning, she saw lying upon the table a copy of a daily paper, and at the head of a column, in glaring type, the word, "Beheaded." This headline pursued her constantly, and wherever she turned, with her eyes opened or closed, there appeared that headline in large black letters. After a little while, this obsession assumed form, and a headless human body, or a bleeding head, would present itself constantly to her mental vision. Finally, the headless body of her own baby seemed always before her. In this weakened condition of body and mind, she visited relatives in Washington, and it was at this time that Dr. Hammett saw her and advised her husband to consult me.

I found a lateral curvature, involving the three lower dorsal and two or three upper lumbar vertebræ, an exaggeration of all the reflexes, great tenderness over the lumbar and dorsal spine. She was brought to my office every day, and treated for half an hour in the static cage by the ozone bath. The tinsel brushes were so arranged that they sifted the current right out upon her back; she seemed never to tire of this treatment. She was under my care about two months, during which time she greatly improved in body and mind, and absolutely refused to leave Washington and return home, until her husband had ordered a static machine, and had constructed a static cage; she insisted upon his attending my office every day, to see how the cage was used. I have received a number of letters from this lady, each one more intense in its praise of the static cage, as her health has steadily improved.

Dr. Franzoni has sent me a number of interesting cases, but one in particular was interesting, from the fact that this lady had been treated by a number of physicians, who gave various names to her complaint, viz.: Malaria, change of life, hysteria, spinal irritation, etc. Dr. Franzoni seemed to strike at once the nature of the malady, and she improved under his treatment wonderfully. When he discovered that medicine seemed powerless to improve her condition further, she was sent to me for electrical treatment. Under this treatment,

the static cage and galvanism, with the assistance of medication from Dr. Franzoni, she has improved steadily. The principal obscession with her was that she could not see a funeral procession pass without the most intense physical and mental depression. She had an irritable spine and lightness of the head—pain in spine and head, inability to take exercise, etc. This condition was produced by a severe mental shock in the following manner: On returning one summer afternoon to her suburban home, she heard scream after scream, proceeding from her house. Just at this time a neighbor ran out, and exclaimed, "Oh, Mrs. ———, your girl is burned up." The poor woman had but one thought, that of her only daughter. As she was hurrying on, the form of a girl in full blaze ran out the house, and fell in the yard; her husband rushed to the rescue, and when the flames were extinguished, discovered the form of their dying servant. This was several years ago, and this lady is just slowly recovering from that shock.

Now, why should shock produce such a lasting effect? We know that it often kills, but when the patient's life is spared, it would seem that unless some damage were done to the central structures, he would quickly recover; and, with many, this is the case, but with a very sensitive subject the case is quite different. Especially, if there is an unstable condition of the higher nerve centres, a severe shock is all that is necessary to disturb their equilibrium and distort their healthy and harmonious action, rendering them inco ordinate; and after the shock has subsided, they are powerless of themselves to resume healthy action. The gentle galvanic current passed through these centres aid them to return to physiologic action.

The ozone bath necessitates the inhaling of pure oxygen, which permeates every tissue, feeding the impoverished blood corpuscles, and supplies food and strength to the psychic motor and sensory centres. This is a theory, but the success that has followed the treatment helps to sustain this hypothesis.

THE HYPODERMIC SYRINGE AND ITS USE IN MALARIA.*

BY KENNON DUNHAM, M. D., Cincinnati, Ohio.

The use of the hypodermic as a form of medication, is being extended daily. Its great advantage lies in its exactness and its rapidity. The resulting abscess and the pain have been the greatest drawbacks. If any one will use proper aseptic and antiseptic precautions, and carefully selected drugs, there need be no abscess.

Its use frequently relieves the stomach to a most wonderful extent, and enables us to give proper nourishment, which is of the utmost importance. Our forefathers neglected this, and often prevented a cure by their medicines. To-day pharmacology has reached so high a standard that nauseating drugs are rarely necessary. Yet our prescriptions often take away the appetite. Where it is possible to employ the hypodermic the stomach is relieved, (with a few exceptions, as apomorphia,) and we can feed the system as well as medicate.

It seems to me that the syringe will be used much more in the future than it has been in the past; but I wish to call your attention to its advantages in malaria.

Malaria is a disease from which the Mississippi Valley has suffered throughout its medical history. Many theories of its etiology have been advanced, and a bacillus carefully described; but Laveran, a French army surgeon, while working in Algiers, was the first to recognize the parasite in the blood, and to believe in its relation to malaria. Laveran had a long and heated discussion with several Italian observers, which led to much bitter feeling. For a long time Marchiafava and Bignami constantly refused to see the parasite, although Laveran made a trip to Rome to show it to them.

They were contending for the bacillus of malaria. Later, their own investigations proved to themselves that the parasite was the cause of the disease, but even to this day they have never acknowledged the work of Laveran as amounting to anything, and have never owned that he was right; but have described it as if it were new, from their own pens. Their work is of the best, and their researches have advanced far ahead of anything Laveran has given us.

To-day we recognize three forms of malaria—tertian, quartan, and æstivo-autumnal.

The life history of the tertian and quartan parasites has been thoroughly studied, but that of æstivo-autumnal is still in doubt. It may be that later we will find more than one variety of parasite under this division.

Malaria is undoubtedly caused by a parasite in the blood, and it is only by the extermination of this parasite that we may hope to bring about a cure of malaria. When the parasite is seen, we know at least that part of the trouble is due to malaria. Thus the uncertainty of

* Read before the Mississippi Valley Medical Association, Louisville, Ky., October 5-8, 1897.

the diagnosis exists no longer, the doctor ceases to worry as to whether or no he is right, and the quinine is increased until a cure is effected.

The question arises as to what time in the life of the plasmodium quinine can do its best work. One would suppose that the younger forms would be the more delicate. So it is; and we find that if the quinine is in the blood at the time of segmentation, it has a much more deadly effect upon the disease than if there at any other time. Segmentation occurs at the time of the chill or just before, and can be predicted by the microscope. The chill is in all probability caused by some toxic property, which is liberated at the time of segmentation. In predicting the chill, you can judge approximately of the time of segmentation. When you realize that the life history of a tertian parasite is about forty-eight hours and that of the quartan is about seventy-two hours, you can see that this prediction presents no great difficulty. But with the æstivo autumnal we have an uncertain life history, and cannot be so accurate.

Some cases seem to get well without medicine; others only need the assistance of a little quinine; while others produce death in spite of very large doses of quinine. There are a few systems which cannot tolerate quinine, to one of which I shall call your attention. It is in severe cases, which do not tolerate large doses of quinine, and cases in which very rapid control of the disease is desired, that I recommend and urge the use of the hypodermic syringe.

The form of quinine which I now use is the hydrochloro-sulphate of quinine. It has given the best results, and has the least drawbacks. It is soluble in equal parts of water. It has the strength of the bisulphate, and is decidedly the least painful of all the quinia salts which I have tried. The hydrochlorate with urea is also soluble with equal parts of water, but is much more painful. It is usually used in 50 per cent. solution, and the pain frequently lasts for an hour, while the double salt is easily tolerated even by very nervous patients.

I have always made the injection into the deep muscles of the gluteal region. It is best to wash the part with a $\frac{1}{20}$ solution of carbolic acid, as that renders the surface antiseptic and numbs the sensative nerves.

After a careful study of twenty one cases, it was found that by giving small doses of quinine —five grains four hours before the suspected and predicted paroxysm, and another five grain dose four hours after or at the time of the paroxysm—the disease could often be checked at once and cured in a few days. Yet it is not always possible to thus so easily control the disease, and I believe that it is much easier to get control in a place like Cincinnati than in a typical malarial district. Even in Cincinnati we are often compelled to use larger doses, and at times to resort to the hypodermic. Hypodermic injections were given daily—six-grain doses of the hydrochloro-sulphate of quinia being used. The bisulphate was used twice, and only four and a half grains injected. It worked very well, but was painful. (I have had Werner and Simonson, of Cincinnati, make hypodermic tablets of the hydrochloro-sulphate. These are readily soluble, and are easily preserved).

In places where there is much more malaria than in Cincinnati, and where there are oftener fatal cases from this cause (I have seen only one fatal case in Cincinnati), I believe that the hypodermic could be used to the utmost advantage. One great danger lies in the fact that you are liable either to be condemned for treating the patient unnecessarily, or you lose sight of your patient, to have a relapse follow.

It is seen that the æstivo-autumnal is the most persistent. I should advise in treating this form of diseases, that little time be wasted with any form of medication except the hypodermic, and that this be pushed relentlessly. Also, the best hygienic surroundings should be given such cases. A relapse is very liable to occur, and you are not safely out of the woods for many weeks.

TUMOR OF THE CEREBELLUM WITH NECROPSY.*

By CHARLES W. BURR, M. D., Philadelphia, Pa.

Professor of Nervous Diseases in the Medico-Chirurgical College, Philadelphia.

Those of you who were present at the clinic given to the American Medical Association last May will remember that I showed a little girl whose chief symptom was inability to walk or stand, though when lying or sitting she could move the legs well, and without ataxia or palsy. I was unwilling with the data then had to give a positive opinion as to whether she had hysteria or cerebellar disease. As we studied the case longer it became clearer, and soon there was no doubt that the girl had a tumor of the cerebellum. Deciding that she was incurable, we sent her home, and heard

* A clinical lecture delivered at the Medico-Chirurgical Hospital, October 1, 1897.

nothing more of her till a few days ago, when Dr. Murray wrote asking us to assist him at the necropsy. I have the brain here, but before examining it let us once more go over the clinical history.

C. D., 9 years old, female, was brought to the hospital by Dr. B. J. Murray on May 25th, 1897. Her parents are in good health. She was born at term. The labor was not hard, and instruments were not used. She was breast-fed fifteen months. She never had convulsions nor any serious illness during infancy. She began to talk and to walk at fifteen months. Since her third year, she has had occasional attacks of vomiting. Her parents date the present illness from a fever of some kind which occurred in August, 1896. During convalescence, it was discovered that she had difficulty in walking. Since then she has never walked well, and at times has not been able even to stand. The amount of disability has varied greatly from time to time. There has been constant obstinate constipation, but no difficulty in micturition. From the beginning she has been excessively emotional, and has had frequent attacks of causeless laughing and weeping. For several months she has vomited frequently without nausea. Intense frontal headaches have been frequent.

Examination.—A well nourished child, red-lipped, clean-tongued, clear-skinned. She is bright—indeed, precocious. Speech is normal. There is neither ataxia nor palsy of the hands. In bed she can move the legs strongly, and in any direction, but so soon as she attempts to stand she loses all control of them and tumbles to the ground. The knee jerks are spastic, and ankle clonus is present. Touch and pain sense are normal in the legs and arms. None of the cranial nerves are palsied. At the first ophthalmoscopic examination Prof. Fox found the eye-grounds normal, and a few weeks later there was the merest suspicion of optic neuritis. The heart and lungs are normal. The urine contains neither albumin, casts, nor sugar.

At first during her stay in the hospital she improved so much that she could stand alone, could walk a little, but with very uncertain gait, and headache and vomiting ceased entirely. After a few weeks, however, she rapidly grew worse again, and when discharged was in about the same condition as when admitted.

For several weeks she remained the same, and then, as is stated, became somewhat paretic in the legs and began to have general epileptiform convulsions. Finally, a few days ago, a series of violent convulsions ended in death.

Post-mortem examination revealed the following: The skull was irregularly globular the frontal eminences and the right parietal region being very prominent. The skull cap was very thin, averaging less than one-eighth of an inch in the thickness. There was no separation of the sutures. The membranes were normal. All the convolutions were flattened, and the sulci were very narrow. On cutting through the infundibulum, which was much dilated, about twelve ounces of a clear, straw-colored fluid escaped. The olfactory bulbs and the optic nerves were as flat as ribbons. The lateral, third, and fourth ventricles were much dilated. The ventricular floor was smooth. The basal ganglia were normal. The cause of these secondary pathological lesions was a tumor apparently arising from the valve of Vieussens and the superior peduncles, and invading or rather pushing before it the middle lobe of the cerebellum. It was about as large as a pullet's egg, irregularly hemispherical, the flat surface forming a part of the roof of the fourth ventricle, firm and white. Microscopic examination has not yet been made.

The history as read looks little like hysteria, and I should be disappointed if any of you should make that diagnosis, and yet when I first saw the child I was not sure that any organic disease existed. The difficulty in walking, according to the history, varied so greatly from time to time, the emotionalism was so very marked, the apparent improvement following admission to the hospital was so great, her general nutrition was so good, that I had hope at first that we had to deal with a purely functional trouble. A few days' study convinced me of my error.

Now, let us take up the symptoms one by one, and see how we reached the diagnosis. As you know, we divide the symptoms of tumor of the brain into two classes: The general symptoms, those which may occur no matter where the tumor is; and the focal symptoms, those which depend upon the situation of the lesion.

The most important general symptoms are headache, vertigo, vomiting, general epileptiform convulsions, and optic neuritis. Our patient suffered from all of them. Her headache was unlike that most frequently present, in that it was intermittent with distinct and sometimes quite long intervals, in which she was entirely free from pain, whereas usually the headache of brain tumor is constant, though varying greatly in intensity from time to time. The mere intensity of pain is not significant. Usually the location of the pain is of no localizing value. This girl had a cerebellar tumor, and the pain she suffered was sometimes frontal,

sometimes occipital. Pain is apt to be most severe when the meninges are involved, and may then be distinctly localized, the scalp may be tender, and if the other symptoms point to the painful area as a possible seat of lesion, the pain is of some little localizing value; but if the seat of pain does not agree with the location pointed out by the other symptoms pay no attention to it. A tumor on one side may cause pain on the other, or at one pole pain in the opposite.

Vertigo in our case was an unimportant symptom. It may be severe, constant or paroxysmal. When the tumor affects the cerebellum, or its peduncles, it rarely is accompanied by forced movements around the long axis of the body.

The kind of vomiting present in our patient is characteristic of brain disease. It is called projectile. The patient apparently causelessly and without nausea suddenly ejaculates the contents of the stomach. Remember, however, that nausea may be present in cerebral vomiting. General epileptiform convulsions occurred in our case late in the disease. They may be caused by a tumor in any region, but are rare in cerebellar disease. A local convulsion, or one beginning locally, is of some localizing value. It means the seat of disease is near enough to the motor centre to directly influence it, though the lesion itself may not actually invade it. Hence, even a strictly local convulsion is never of such great localizing value as a palsy may be.

The examination of the eyes helped us very little. When we first saw the child the fundi were normal, later there was slight optic neuritis. Unfortunately, during the last months of the patient's life no examination was made, but at the necropsy we found the optic nerves much diseased. You would be apt to assume that the patient's power of vision would decrease directly with the amount of optic neuritis present. Very often it does not. There may be very marked choking of the disc with fairly good vision. Ophthalmoscopic examination alone will prove the existence of papillitis.

These symptoms were sufficient to justify the diagnosis of brain tumor. All of them occur separately in many diseases, and their value depends upon their combination. But even then they do not always mean tumor. They may, for example, be incidents in chronic interstitial nephritis, which of course was not present in this case. But let me warn you to remember that in that disease there may be an optic disc indistinguishable from that due to tumor, and headache, vertigo, vomiting and convulsions are frequent in uremia. Remember, too, that the convulsions of Bright's disease may be local, and at necropsy no gross local lesion be found.

There was a large element of emotionalism in the case—fits of causeless weeping, periods of silliness, of melancholy and the like. So marked was this, that at the beginning the trouble in walking was thought both by the parents and the family physician to be wilful. Now, emotionalism in a previously morally and mentally healthy child means disease, but it is present in so many diseases that it is of no diagnostic value in excluding organic troubles. It occurs so frequently in brain tumor, however, and especially in tumors in or near the cerebellum, that the association cannot be a mere coincidence. I do not mean at all that the cerebellum is the centre for the emotions; indeed, evidence is lacking that the emotions have any one local seat of origin. True hysteria, which is a very different thing from emotionalism, also often complicates and is caused by brain tumor.

Let us now pass on to the focal symptoms. We will study only those due to cerebellar disease. The characteristic symptoms occur only when the middle lobe is affected, either directly or by pressure. There may be a severe and wide spread lesion of either hemisphere without localizing symptoms. The most interesting of them is cerebellar ataxia or titubation. Our patient was an excellent example of it. She could move the legs well in bed, and so long as she lay there was no evidence of any motor trouble, no ataxia, no palsy. So soon as she attempted to stand, however, she lost all motor control. At the times when she could walk her gait was like a drunken man. There was no ataxia in the hands, and this is noteworthy. It, together, with the fact that the motor difficulty appeared only on attempting to stand or to walk means that the real difficulty in cerebellar ataxia is a loss of the power of maintaining equilibrium. This loss, though characteristic of cerebellar disease, is not pathognomonic. A similar condition sometimes is seen in hysteria. It is then called astasia-abasia, and most often is accompanied by some of the stigmata of hysteria, but may occur as an isolated symptom. It was the motor difficulty and the variability of the symptoms, together with the absence of optic neuritis, which made me hope at first that there was no organic disease. The ataxia of posterior sclerosis differs widely from that of cerebellar disease. It is not influenced by position, is made worse by closure of the eyes, frequently affects the arms as well as

the legs, and is accompanied by absent knee-jerks, Argyll-Robertson pupil, muscular pains, etc.

According to Bruns, tumors in the prefrontal lobe may produce a gait like that in cerebellar disease. I do not know how frequent this is, but since the cerebellum and prefrontal lobes have a crossed connection, it may prove to be of value. It is certain, however, that there may be a prefrontal tumor without disturbance of equilibrium.

There is not yet absolute agreement among authorities as to the condition of the knee-jerk in cerebellar disease. In our case, at the time she was under observation, it was much increased, and ankle clonus also was present. We know clinically that it may be normal, absent, unequal, increased or variable, but clinical observation without post-mortem examination cannot solve the question, because usually a tumor of the cerebellum affects not only that organ, but also, even though only indirectly, the motor tract from the cerebrum interference with which may affect the knee jerk. The fact that cerebellar disease is so rarely strictly and entirely confined to it is the reason that this question remains unsolved. It is probable, however, that cerebellar disease alone inhibits the jerk, and that its increase is due to interference with the motor tract from the cerebrum.

On account also of the invasion of neighboring parts, other symptoms may occur—for example, palsy of the sixth nerve.

Vomiting, though a general symptom, is more frequent in cerebellar than in other tumors. Papillitis is more apt to cause complete blindness, and nystagmus is not infrequent.

Your diagnostic task is not completed when you have proven the existence of a tumor and decided upon its location. There yet remains the question of its nature. This question usually is unanswered, and when answered, it is not by the symptoms of the tumor itself, save that some are apt to run a much more rapid course than others, but by the existence of a growth in some other part of the body, from which we infer that the cerebral tumor is of the same nature, by the age of the patient, certain tumors being most frequent in early life, and, but this is by no means so sure as some would have us believe, the therapeutic test of anti-syphilitic treatment. Some specific tumors are incurable by to mercury and the iodides, some non-specific tumors are improved by their use. Finally, as to the whole question of diagnosis, I cannot do better than quote the words of him who said, "Brain tumor can usually be diagnosed; its location sometimes, its nature rarely."

1327 *Spruce Street.*

CAN THE DISPENSARY ABUSE BE CORRECTED?

By LLEWELLYN ELIOT, M. D., Washington, D. C.,

President of the Medical and Surgical Society of the District of Columbia, etc.

Notwithstanding the agitation against the abuse of medical charity, in this city, by the Medical Association of the District of Columbia nearly one year ago, and the adoption of stringent rules governing the admissions to hospitals and dispensaries, requiring every applicant to furnish written evidence of worthiness, the evil still confronts us. We are no nearer its solution than we were at the time of the spasmodic explosion.

In the beginning, it is well to ask, "Whose fault is this?" and "Why are the abuses still existing?" The answers come from all sides, "The doctors themselves;" and "Because they are afraid to antagonize boards of management."

That the abuse of medical charity in this city can be remedied—in fact, can be entirely abolished—cannot be successfully denied; it only needs the application of a few business principles with the enforcement of the regulations of the Medical Association. Did all medical men, who are in any way connected with institutions for the free treatment of the sick poor act as a unit, refusing service unless proper evidences of worthiness are presented, the abuse would cease, clinics would be almost deserted, and in a very short time many institutions would close their doors. The claims may be made that colleges need clinical material; that students need the experience which they can only gain by attendance upon the services at these different institutions. There is no denying these claims, but they can be met successfully by the associations; that in clinics of a crowded dispensary, the examination of cases is most superficial, the treatment is generally limited to a few stock prescriptions, and the benefit derived by the applicants is, in the greater majority of cases, without permanence. In other words, the services are a farce, a parody upon medicine. Did business principles have any weight in this matter, the number of applicants would decrease 60 to 75 per centum in six months, and every applicant would be an object of charity, would be examined satisfactorily, and receive such treatment as his case would require. Another advantage would be, students would be enabled to understand and appreciate the work at which they assist; the chief of clinic would

become a successful teacher; there would be no rushing patients through a service at the rate of sixty to the hour; students and physician assistants would be spared the spectacle of witnessing pauperization of the community, as well as assisting in cheating the profession of its just reward.

The emergency services which hospitals and dispensaries are establishing should be limited to the treatment of those cases which come under the legal interpretation of the term emergency "cases where no physician can be procured," but with their hurry ambulances they rush cases, the rich man as well as the pauper, away from hotels, clubs, private residences, and elsewhere, to their wards, and this without any expectation of payment for such services as may be rendered. There is neither reason, nor justice, nor humanity, in this line of action, but at the same time these gentlemen, in their frantic efforts to make large records of cases, will refuse to allow their ambulances, sustained by the public funds, to convey a sufferer to his home, or even allow a brother practitioner the use of a hypodermic syringe in emergency cases which they are not allowed to grasp. This might be excusable were these institutions supported by private funds, but in an institution supported in whole or in part by the people, there is neither humanity nor manhood in such actions. It is not to be supposed, for a moment, that the ambulances of the hospitals are to be common carriers, but it is reasonable to suppose the hospital executive would know whether or not a patient is to be brought to its wards before the ambulance, with its attachments, is sent in answer to a call.

Without going further into this matter, I shall quote from the figures of the last report of the Eastern Dispensary in this city. This institution, organized ten years ago, has always opposed the distribution of medical charity without some discrimination; it always reserved the right to refuse treatment to any case where there was doubt as to the worthiness of the applicant, upon the ground that it is a very easy thing to make an honest man dishonest, but it is a very hard matter to reclaim him. True charity takes the man, honest or dishonest, and endeavors to place him in a position to be self supporting; if he is sick and in employment, he is not entitled to free medical attention any more than he is entitled to a free house, free groceries, free shoes, or any of the other necessaries of life. The fact of his being sick is a misfortune, not always a crime, and there are plenty of physicians who would attend the sick honest poor man, were they approached in a proper manner, the circumstances of the case stated, and an expectation to pay for services expressed. In this way this man would be kept as an honest man, and some physician would be rewarded for his work. It is true the reward might be small, but it is within the means of the patient.

During the past five years, 12,947 cases were admitted to this institution, an average of 2,589 cases a year; the number of applicants registered in the six months ending June 30, 1897, was 1,110; of this number, the report states 309 were *admitted* to treatment, and 801 were *refused*, as they either refused to furnish evidence of being worthy, or were unable to obtain it; in other words, over *seventy per cent.* were found *unworthy* of charity treatment. These applicants were refused aid; now, where did they go? They either sought advice from some physician, went to some other institution where the swell of numbers was a necessity, or recovered without medical aid. It is not within the range of charity to render poor service to an applicant—either the best or none at all—and an institution which adheres strictly to the policy of preventing fraud upon the medical profession and upon a benevolent public, should have the support which it requires—moral, financial, and professional.

Let every institution follow the rules, as laid down by the Medical Association of the District of Columbia, and in the shortest imaginable time the abuse of medical charity will be a thing of the past, and physicians will enjoy the fruits of their labor.

1106 *P Street N. W.*

TOBACCO NEUROSES.*

By PHILIP ZENNER, A. M., M. D., Cincinnati, Ohio.

Lecturer on Diseases of the Nervous System in the Medical College of Ohio.

Nicotine is a deadly poison; kills more quickly than any other, excepting prussic acid. Physiological effects of tobacco, determined by experiments on animals, and observations on man, are, firstly, on the central nervous system, brain, and spinal cord; symptoms, impairment or loss of consciousness, inco ordination, convulsions, abolished reflexes, and paralysis. Anæmia of the meninges, and changes in cortical cells have been seen. Secondly, on the peripheral nerves. Some paralyses are from

*Original abstract of a paper read before the Mississippi Valley Medical Association, October 6, 1897.

affections of the motor nerves. The terminal filaments of the vagus are likely to be first stimulated and then paralyzed, with corresponding manifestations on the part of the heart. Various symptoms have been attributed to affection of different parts of the sympathetic system.

The blood, particularly, is effected. There are often changes in blood pressure, and the red and white corpuscles, as well as the hæmoglobin, may be markedly altered. The cells become crenated, or partially disintegrated, and their movements and numerical relations disturbed, the hæmoglobin reduced in quantity, or its oxygen bearing power lessened.

Tobacco also exerts its influence upon the alimentary canal, salivary glands, kidneys, etc.

As far as nervous diseases are concerned, smoking is the source of most injury. Chewing often leads to digestive disturbances, but much less frequently causes nervous manifestations. The important ingredient of the tobacco smoke is nicotine. Jacoby believes that carbonic oxide, present in from 5 to 13 per cent., plays an important rôle, and, especially, increases the toxic effect on the blood, lessening its oxygen, etc.

The poison of tobacco is stronger in cigars than in cigarettes or pipes. Cigarettes are a source of danger, only, because they are particularly smoked by the young, to whom tobacco is especially dangerous, and because they are more likely to lead to excessive smoking. A mild Havana cigar contains but 2 per cent. nicotine, while some tobacco contains 8 per cent., so that the former is less likely to do harm.

Toleration for tobacco is soon acquired. It, yet, leads to disease in many individuals. Causes that may be assigned are idiosyncracies, supersaturation of the system, after many years of excessive use, neurotic temperament, sedentary habits, living much in a smoke-laden atmosphere, the habit of inhaling the smoke deeply into the lungs; and the presence of such additional causes of disease as alcohol, excessive use of coffee, mental strain, worry, etc.

Tobacco is likely to attack the weakest points, and for this reason those suffering with functional or organic heart disease, neurasthenia, etc., often bear tobacco poorly.

Tobacco is, in many instances, only one of several, or many causes of disease; but its removal may be an important factor in treatment.

The nervous diseases of which tobacco may be the cause are: Firstly, transient manifestations from venery excess, as headache, irritability, restlessness, tremor, etc. Secondly more pronounced disease from chronic intoxication, of which the more important are functional disease of the heart, amblyopic tremor, vertigo, neurasthenic neuralgia, and anginæ, or rather, pseudo angina.

Epilepsy, paresis, and other psychoses have been attributed to it without foundation; though it is possible that excessive use has predisposed to such diseases. The diagnosis may be easy. In most cases, the patient does not need the physician for either diagnosis or treatment. In other instances, the cause is obscure, and only the abstinence from tobacco will determine its relation to the disease. In case of doubt the patient should always be given the benefit of such a trial.

The treatment should be entire abstinence. The mere lessening of the amount of tobacco often fails altogether. After abstinence for a year or more tobacco may often be resumed moderately, without harm.

A number of cases were reported. Two of these were to show how easily tobacco is overlooked as the cause of disease. One had attacks of vertigo, unsteadiness of gait, and other nervous symptoms for a long time. An eminent physician had the case in charge, had wavered in his opinion, and finally diagnosed organic disease. The man had smoked excessively for years. When he came to the writer's charge he was ordered to discontinue tobacco, and he was soon comparatively well.

The other case had vaso-motor symptoms of various kinds, insomnic and digestive disturbances, for many years. He smoked immoderately from boyhood. He had been in the hands of many physicians, but no attention was paid to his smoking. In this case, too, the writer ordered tobacco to be discontinued immediately, and the symptoms disappeared as if by magic.

Other cases were reported, illustrating the ill effects of tobacco upon the young.

2947 *Gilbert Ave.*

THE SURGERY OF TYPHOID FEVER.*

By HUGH M. TAYLOR, M. D., Richmond, Va.,

Prof. Practice Surgery, University College of Medicine, Richmond, Va.; Surgeon to Virginia Hospital, etc.

The evolution of aseptic surgery has broadened the scope of active interference to such an extent as to call for not a few protests against the "furor operativus." Let me urge

*Read before the Richmond Academy of Medicine and Surgery, October, 1897.

that conservatism is not always embodied in the idea of masterly inactivity. Surgery has for its highest ideal, to treat directly the cause of disease and death. Asepsis has brought within the province of conservative surgery many conditions heretofore considered beyond its resources.

Not one of the least promising fields of usefulness, recently much improved, is the surgery of complications arising in typhoid fever. (1) In the treatment of typhoid perforations by celiotomy, and suturing the perforation or perforations, we have a last resort in what are, practically, hopeless cases without operation. (2) In the treatment of irremediable hemorrhage, we have in celiotomy and ligation a resource which offers a reasonable prospect of doing good. (3) In transfusion for the relief of the effects of profound hemorrhage and shock, we have a remedial measure of great value.

Typhoid fever in all of its phases has, until recently, by all except a few pioneer students of the subject, been considered essentially a medical subject. It is claimed that from one to two per cent. of all cases of typhoid fever patients have perforation. It is claimed that six per cent. of the deaths from typhoid fever are from perforation. From one to two per cent. of all cases of typhoid fever, then, come within the province of operative surgery, and six per cent. of all cases dying from typhoid fever are essentially surgical.

The field of surgery in typhoid fever complications, is even wider than that indicated in the treatment of perforations. In the Munich hospital report of two thousand cases, ninety were attended by intestinal hemorrhage. Some of these jeopardized life from the profuse bleeding. Most physicians have sat helplessly by the side of patients bleeding to death from hemorrhage of the bowels. Opium, ergot, mineral acids and tannic acids are, in my opinion, poor remedial agents for such a catastrophe—shock or syncope. Nature's potent hemostatic—contraction and retraction of the vessels—is probably the remedy which stays the bleeding. I recall a case in my practice some years ago, in which a young man literally bled to death in twenty-four hours from bowel hemorrhage. This patient had only been in bed with fever for a week. He may and probably did have fever for a week before he gave up and went to bed. No such case should be left to the resources of nature, aided by such questionable measures as the medications I have mentioned. Laparotomy, and an effort to arrest this hemorrhage, is as rational as laparotomy for the arrest of hemorrhage incident to ruptured ectopic gestation. Fortunately, we do not often meet with cases of fatal hemorrhage, such as I have described, but if we do meet with them we will have fewer sins of omission to repent of, if we make an intelligent effort to control a hemorrhage, immediately dangerous in some instances, remotely serious in all, because of progressive anæmia incident thereto.

I have heard the statement made that patients often seem better after a moderate hemorrhage. I know of nothing to justify such a statement. Hemorrhage, as a rule, results from the separation of a slough in an ulcer; in other instances; from the margin or surface of an ulcer devoid of a slough, and, perhaps, in exceptional instances, from an engorged mucosa, all of which conditions point to actual or threatened bowel lesion.

If the life of the patient is endangered from hemorrhage or repeated hemorrhage, and the danger line is not passed after medication and saline transfusion, open the abdomen. What then? If the bleeding point can be ascertained, and compression of the vessels in the mesentery does not control it, then a resection of the ulcer and enterorrhaphy is justifiable. If compression of the mesenteric vessels will control the bleeding, then the feeding vessels should be ligated. As far as I know, this practice has never been carried out. It may sound extremely radical. Granting this to be true, you will be fortunate if, in your practice, you do not, in exceptional instances, meet with cases so desperate as to warrant heroic practice. As far as I know, this practice was first urged by Dr. Hunter McGuire.

It is the family doctor, and not the abdominal surgeon, who will at first have to assume the responsibility in connection with the complications of typhoid fever. This impels me to urge that the surgeon should be called early. I would urge that the wise physician is he who sends for the surgeon early, and the wise surgeon is he who is prepared to operate upon a moment's notice.

Before considering the phase of our subject of widest scope and greatest interest, typhoid perforations, let us consider for a moment the *field of usefulness of transfusion in typhoid fever.* In the shock incident to perforation, or hemorrhage, in the acute anæmia incident to prolonged ptomain poison, and possibly as a remedial measure in the treatment of the ptomain poison, we have, in the transfusion of normal saline solution, an agent of great potency. In puerperal sepsis, in puerperal eclampsia, and in surgical kidney and other forms of sepsis,

transfusion has been practiced with the idea that lavage of the blood favors elimination of ptomain poison. Upon the same principle, transfusion may be found of value in favoring the elimination of typhoid ptomain. Certainly in the depression incident to hemorrhage and shock in typhoid fever, its influence for good is often marked. Some months ago this fact was impressed by a case which occurred in my practice. In the seventh week of fever, after profuse intestinal hemorrhage, a young woman was apparently dying from exhaustion; was cold and sweating, and unconscious from great depression. Respiration, 30 or 40; pulse, 140, and absent at the wrist. The continuance of life seemed a matter of only an hour or two. Whiskey and strychnia and digitalis and caffein and nytro glycerin had been pushed as rapidly as was thought safe, with no percept ible influence for good A quart or more of saline solution, injected into the cellular tissue of the thigh and shoulder, became diffused by massage, but apparently was not taken up by the vessels; it certainly produced no appreciable effect upon the heart. Such was the undistended condition of the bloodvessels, even after cording up the arm, it was difficult to find a vein. Into the open vein the sharp point of the glass pipette of an eye dropper was fastened by a ligature, and the other end of the pipette was fastened in the end of a long tube attached to a fountain syringe. This quickly improvised transfusion apparatus acted nicely. By the time as much as a pint of fluid had been introduced into the vein, the pulse was full and strong, and the introduction of a quart in all increased the volume and arterial tension until the moribund patient's pulse was as strong as that of any of the attendants. The skin became dry, the color to the face and lips more natural, and the extremities warm. Not much improvement in the breathing was noticed; and while the volume of the pulse was so much improved, its rapidity was not correspondingly decreased The pulse-rate continued very rapid, and the respiration rapid and shallow.

The improvement, after the transfusion, lasted five or six hours, at which time the pulse lost in volume until the wrist pulse was indistinguishable. Transfusion direct was again resorted to, with the same encouraging result of increasing the arterial tension and drying the skin, but no effect upon the pulse-rate or respiration was apparent. This last function became more and more embarrassed, and was the ultimate cause of death.

My experience in this case impresses me with the belief that we have, in transfusion, a means of great value in the depression incident to hemorrhage in typhoid fever, and possibly an adjunct in the depressed circulation resulting from any one or more of the many complications arising in typhoid fever.

In severe hemorrhage or shock from perforation, transfusion is certainly a safe expedient, easily adapted, and a resource of great good. In severe hemorrhage or shock from perforation, transfuse; but in this instance, as in all cases of hemorrhage, hæmostasis must rapidly follow transfusion, or else the reaction secured, to a large extent by transfusion, will empty the saline solution out of the same vessels from which the blood escaped. Transfusion, itself, is credited with hæmostatic properties. The saline solution stimulates the heart's action; and causes the capillaries, as well as the large vessels, to contract.

The mission of operative interference in perforations from typhoid ulceration, should be to limit or prevent local or general septic peritonitis. We best limit peritonitis by preventing its occurrence. The key to the successful treatment of this lamentable condition, is an early diagnosis, and an early resort to operative measures. My experience with cases in which perforation has occurred, warrants the assertion that an early diagnosis is usually made. Within the past month I have seen in consultation two cases in which the symptoms were so plain that a prompt diagnosis was easily made. This was equally true in a case which occurred in my own practice about a year ago. This last was the first I have been called upon to treat since the possible good from operative interfereuce has been so clearly impressed.

The patient had only been sick a few weeks; the typhoid fever was mild, and convalescence was thought to have set in. Acute abdominal pain and shock were the cardinal symptoms which enabled me to recognize the grave complication and to urge immediate operative interference. Inevitable death was prognosed without operative interference, and probably a fatal issue in spite of even prompt action. The friends and relatives of the patient refused to sanction the operation. Septic peritonitis was fully developed in forty-eight hours, and impending death caused those who had assumed the responsibility of denying the patient his only show for life to implore now, when too late, that the resources of surgery be applied. I did wrong, perhaps, in yielding to their request. The uninitiated cannot differentiate between an operation performed to prevent

septic peritonitis and one done to cure it. The fatal issue is not credited by this class to the want of early operation. Naturally, in their opinion, the operation is the immediate cause of death. We should endeavor to educate the people to know that the death in this, and allied conditions, is due to a continuation of the morbid processes for the relief of which the operation is done. We should never lose an opportunity to impress the idea that an early operation is conservative in its broadest sense. Not to the operation, but to the want of the early operation, should be credited the fatal issue.

An operation done in a condition which is almost hopeless, and the fatal issue, deter some from being operated upon. It has been my rule to give the patient the benefit of the chance, if it only be one in a thousand. The effect of this policy was seen in a case I saw in consultation a few weeks ago. Unfortunately, this last patient lived next door to the one just mentioned, and knew all the circumstances attending his sickness—the late operation and the fatal issue. In the midst of a mild attack of typhoid fever, perforation took place. Sudden and continued abdominal pain stamped the disease. Operative interference was advised, and refused by the husband of the patient, and refused because he had promised her to do so. A few nights before, she dreamed that a perforation had taken place, and that the doctors advised an operation. The effect of this dream was to make the husband promise not to sanction an operation. Doubtless the dream was the outcome of thinking of the fatal case which had not long before occurred next door to her. This splendid young mother and wife was allowed to die, which she did in forty-eight hours, without an effort to repair the ulcer.

A third case, recently seen in consultation, illustrates the disaster of procrastination. A young man in the third week of a moderate attack was taken with the typical symptoms of perforation—*i. e.*, acute pain, shock, etc. The sudden onset of the symptoms, almost like a thunderbolt from a cloudless sky, typifies the condition of perforation. In forty eight hours diffuse peritonitis, with the usual symptoms of distension, vomiting, depression, etc., was at its maximum; and here was another case, which had been allowed to pass from the realm of possible to that of hopeless surgery—another instance in which the operation would be credited with the death, and no account of the septic peritonitis from the contents of the small bowel (always fluid), pouring into the peritoneal cavity, be taken. If we could only impress the idea that the patient dies from the disease which the operation seeks to cure, and the idea that the early operation seeks to prevent a disease so fatal to life, we would accomplish great good. The facts in the case were fully explained to the friends of the young man. Only the faintest shadow of hope was held out to them, and it was devoutly hoped that they would elect to let him die without an operation, but they grasped at the last straw, and we were placed in the embarrassing position of operating upon a moribund patient. A section after direct transfusion revealed general fibrino-purulent peritonitis, and a small pencil sized hole in the ileum, twelve or fifteen inches from the ileo-cæcal valve; from this fluid fecal matter poured whenever the bowel was moved. The suturing, irrigation and provision for drainage with glass-tubes and gauze were the work of a few minutes. The condition of the patient did not warrant the time necessary to disentangle the matted bowels, or to wipe off the abundant fibrinous deposits found extensively covering the intestines. As was to be expected, death ensued shortly after the completion of the operation, and the finale added another stone to the immeasurable monument dedicated to procrastination in surgery.

With an experience of three recent cases, two of them operated upon, but both so late that an operation was hardly justifiable in either, and the third case in which operation was declined because of a knowledge of the fatal issue in the first case, it is but natural that I should appreciate the needs of educating the profession and public to appreciate the idea that delay is fatal, and that it is not just to the surgeon, to surgery, or to the patient, for the medical adviser to procrastinate until the case has passed beyond the province of surgical resource. It is claimed that no condition save a moribund one contra-indicates operative interference. While this is true, as evinced exceptionally by the recovery of such cases, the clinical picture presented by an operation done to prevent the consequences of perforation, is much less horrible than one done to cure such disastrous consequences. Not a few practitioners, having the responsibility of such cases in hand, will excuse themselves for sanctioning delay because of, what I think is, a wrong opinion, that perforation may exceptionally occur and be recovered from by the unaided efforts of nature. I am strongly of the opinion that the supposed instances of recovery were not really perforations into the

peritoneal cavity. While every abdominal surgeon is often impressed with the wonderful repelling powers of nature, impressed with her almost superhuman power to block, by plastic peritonitis, avenues of infection, I do not believe she is ever equal to the task of limiting the outpoor of fluid feces from a typhoid perforation. Necrosis of mucosa, muscularis and localized peritonitis, with an intact peritoneal covering of the ulcer is, I think, not infrequent. Agglutination around the weakened bowel wall of omentum, mesentery, etc., by the plastic peritonitis is a further sequence, but this morbific condition is not perforation into the peritoneal cavity, Fibrino-purulent and septic peritonitis, and not plastic, is the type of peritonitis incident to contamination by the fluid feces of typhoid fever. It is a forlorn contest between nature and sepsis, incident to a perforation direct into the peritoneal cavity, and the sooner this idea is impressed the sooner will the surgery of typhoid fever be placed upon indisputable ground.

My experience, limited, it is true, while intensely impressing the idea that delay is fatal, is emphatically in accord with those who hold:

1st. That perforating typhoid ulcer can be, and should be, diagnosed prior to the development of local or diffuse septic or fibrino-purulent peritonitis.

2nd. That a perforation of a typhoid ulcer into the peritoneal cavity means the discharge of virulent septic contents in quantities far too large to justify the hope of its being circumscribed by plastic peritonitis.

3rd. Diffuse septic or fibrino purulent peritonitis, with inevitable death if left to the resources of nature, is the unvarying result of this complication of typhoid fever.

4th. That the treatment of complete typhoid perforation is essentially surgical, and the surgical treatment is logically conservative. That the treatment of uncontrollable hæmorrhage, with the view of preventing immediate danger and subsequent increased anæmia, is probably within the provision of rational surgery. Rectal, cellular and direct transfusion is a resource of great value to the treatment, (*a*) of shock, (*b*) of hæmorrhage, and (*c*) probably of ptomain poison.

5th. That the death-rate is large in spite of and not because of operative interference; and in complete typhoid ulceration, is increased by each hour of delay in resorting to operation.

6th. That the mission of operative interference is to prevent septic and fibrino purulent peritonitis.

7th. The idea should be impressed that the time often conceded by the physician as warranting operation—*i. e.*, the developed condition of diffused peritonitis, is the time practically conceded by the surgeon to be too late—the case having then passed, with few exceptions, beyond the province of rational surgery.

8th. Not even a moribund condition should excuse us for abandoning patients with typhoid perforation, since suppurative peritonitis from just as desperate sources has been brought within the scope of successful surgery by an improved technique.

9th. The statistics, though too few to be conclusive, support the opinion that timely surgical interference is conservative rather than radical. Of fifty-two cases recorded, seventeen recovered, 32.68 per cent.; or, excluding some doubtful cases, of forty-five operations, eleven recovered, a percentage of 26.22. While these statistics will be changed for the worse by the cases it has been my misfortune to see, there are doubtless successful cases, reports of which I have not seen, to offset them, and with a due appreciation of the possibilities of early resource to operative interference, I anticipate marked improved statistics in the near future.

The technique of the operation does not differ from that in vogue in the treatment of intestinal perforation and its consequences from other causes. A knowledge of the fact that the perforation is, in a majority of instances, single and occurs in the ileum within eighteen inches of the ileo-cæcal valve, enables the surgeon to find the lesion without much trouble.

It is claimed that there is hardly a true authenticated case of gunshot wound of the bowel with recovery. I am skeptical as to the correctness of the diagnosis of complete typhoid perforation with recovery; certainly in the absence of a post-mortem. Those who have seen the fluid fecal matter pouring out of the perforation will appreciate how small must be the chance of preventing infection in any way other than by an operation, and this will, I think, be a sufficient appeal to us to do the best we can by operating upon even the most desperate cases.

If a Trained Nurse is Wanted

In the office or practice of a surgeon or gynecologist, we can inform the party of one who desires such a place, and who has had large experience as head nurse in a prominent city hospital. Her endorsements are among the best. Address Miss Lelia Dunham, 408 E. Grace St., Richmond, Va.

PNEUMONIA TOXÆMIA vs. THE THEORY OF OBSTRUCTION IN PNEUMONIA.*

By EUGENE R. CORSON, B. S., M. D., Savannah, Ga.

We have before us a very interesting paper by Prof. Andrew H. Smith, of New York, entitled "Some Considerations in Regard to Acute Obstructive Diseases of the Lungs."† The following are Prof. Smith's conclusions:

"1. In acute pulmonary obstruction, the danger being from exhaustion of the right heart, the pulse of the wrist does not give reliable indications as to the gravity of the condition.

"2. This can be appreciated more correctly by studying the pulmonary circulation by the aid of the pulmonary valve sound.

"3. Marked accentuation of the pulmonary valve sound indicates a fairly vigorous right heart laboring to overcome resistance in the pulmonary circulation.

"4. Decrease of a previously existing accentuation with only moderate dyspnœa indicates decrease of pulmonary obstruction.

"5. Decrease of accentuation with increase of respiratory distress indicates that the right heart is becoming exhausted.

"6. Relief is to be sought, (*a*) by regulating the diet in conformity with the diminished power of digestion and sanguification; (*b*) by the use of medicines which dilate the arteries and promote transference of blood to them from the veins; (*c*), by the inhalation of oxygen gas; (*d*), by artificial respiration; (*e*), by placing ligatures about the extremities in order to retain the blood in them and prevent its return to the heart."

It is because this paper of Prof. Smith's deals with pneumonia as a typical obstructive disease of the lungs that we wish to combat it and enter our earnest protest against the pathology it teaches.

According to this theory, the heart gives out from overwork and overstrain in attempting to overcome the obstruction caused by a hepatized lung.

Physiology teaches that the vascular capacity of the lungs is about one-fifth or one-sixth that of the entire body. Therefore when a lobe is affected by pneumonia, (and granting, for the sake of argument, that the obstruction is great in this affected portion,) there is an enormous collateral circulation, all sufficient to carry the blood through to the left auricle. Hydrostatic pressure, like the electric pressure, seeks the lines of least resistance. The blood refuses to pass through an obstruction when a free channel is open to it.

For this theory to hold together at all it would have to be granted that the heart pumped the same amount of blood through this obstruction as it did when unobstructed, which is clearly not the case. Further, if this obstruction were the chief danger in pneumonia, the severity of the case would depend entirely upon the amount of lung involved, which by no means holds good, as many fatal cases show a small involvement of lung tissue, and many cases recover where the amount of lung tissue involved is great. Again, according to this theory, the vigorous and muscular would have a better chance, while the delicate would succumb, which is far from being the case. We in the South see the great fatality of pneumonia in the negro, where great muscular vigor counts for nothing in the toxæmia. The crisis in pneumonia is not in step with the breaking down of the obstruction and the resolution of the exudate. The time of greatest consolidation occurs when the heart is still strong, and it begins to fail, in fatal cases, when the lung is clearing up, and the obstruction, if it existed at all, has passed away. Does not clinical experience teach us that simple obstruction acts rather as a stimulus to the heart, and that its muscle increases in size to meet the heavier burden imposed upon it? There are many consumptives walking the streets with more lung tissue solidified and obstructed than in a case of pneumonia. A rapid case of hydrothorax, with the lung compressed to one-half or to one-third its normal volume, has a better heart than the pneumonic patient, with but a small area of lung involved. In many a case of pnuemonia, where the acute symptoms subside and the consolidation remains for weeks, the heart symptoms follow the general acute symptoms. Look at the insidious cases of pneumonia in the aged, where the toxæmia is slight, and the diagnosis rests wholly upon percussion and auscultation. We have a feeling recollection of failing to diagnose pneumonia from failure to percuss and to auscultate. We have seen cases where an entire lobe is hepatized and the heart but little above the normal in frequency of beat.

Bacteriology has shown us that it is the

* Read before the Clinical Society of St. James Dispensary, Savannah, Ga., November 5, 1897.

† We owe an apology for criticising a paper written seven years ago. We use it as a text rather than as a means of criticising one who stands so deservedly high as a Clinician. The theory set forth was the one quite generally accepted at the time. It differs so radically from the pathology of pneumonia which is asserting itself more and more, that it will forcibly show us how rapidly medical thought has changed in regard to this disease.

blood, and not the lung, which is principally involved, and that here is the battle ground where the poison and the patient's vitality fight it out. With this toxæmia granted, all the symptoms become plain. Temperature, pulse, crisis and *uncertainty of treatment*, all come out clear to us, and this obstruction theory becomes puerile. We know better; and we also know, to our sorrow, why our drugs are so often useless. We have a specific poison to combat, and we have no specific antidote. What could we do in malaria without quinine, in syphilis without mercury and potash? What can we do in variola without vaccination?

But if we are not treating our pneumonia cases any better than we did years ago, we certainly know more about its pathology. We feel sure Prof. Smith himself will now admit that pneumonia is a general toxæmia with a local manifestation in the lung. This admitted, the toxæmia becomes the one important thing, and all else dwindles into insignificance. Charmed though we are by the ingenuity of the reasoning, in the present light of bacteriology it can be swept away in a breath. So far as the local manifestation of the disease is concerned it might just as well be in any other part of the body, provided we cannot get at it.

With all the new drugs at our service, the nitrites, the new heart tonics, and what not, are we saving more patients than we saved years ago? Are we doing anything with drugs today in puerperal septicæmia, with the uterus and pelvis disregarded? Has not the only advance come from cleaning out the uterus, or entirely removing it, and stopping the spread and the local manufacture of the poison? Is not the mere use of drugs in both cases but therapeutic fiddling while the body is burning to death?

When the lung resolves and the patient recovers, it is not the obstruction which has been overcome, but the poison which has been conquered. Provided the forces generating the poison go untouched, they might just as well be in the patient's foot or big toe. That is all that tetanus demands for a starter.

If we fairly face this disease, illumined by the searchlight of bacteriology, two alternatives confront us: We must either attack the local manifestation, or find a specific antidote for the toxæmia. Let us be honest about our drugs, and let us not be blinded by ingenious and brilliant ratiocination on the physiological actions of heart stimulants and vaso-motor excitors and depressors—all very well in non-toxic conditions, but all very foolish in deep blood poisoning. Dietetics, stimulants and hygiene carry us so far and no farther; make the best of them; but don't touch the therapeutic button and think that drugs will do the rest. Except for making the patient more comfortable, they will do very little. We cannot curette the lung, we have no intra-pulmonary douche; but we can try to find an antidote to the poison, just as the antidote to diphtheria has been found, and just as the antidote to snake venom is well above the horizon.

Let us refer briefly to the conclusions of Prof. Smith, admitting, for the sake of argument, the correctness of the obstruction theory. His assertion that the pulse at the wrist does not give reliable indications of the gravity of the heart's condition, runs counter to clinical experience in all toxæmias, as well as the anatomy and physiology of the heart. As the left ventricle is the most active of the four chambers of the heart, it sets the pace for the others, and has proven clinically a reliable guide to the entire heart's action. We can with more justice separate the actions of the auricles from the ventricles than we can the ventricles from each other. A goodly proportion of the ventricular muscular fibres is common to both ventricles, and they act together. We do not think that the ventricular contraction can be clinically separated into right and left. This is too much like differentiating between the contraction of a muscle's origin and insertion. If the muscular integrity is lost on one side it is on the other.

The refinements of theory worked out in the study are often set at naught by the experience at the bedside. As to Prof. Smith's 6th clause, we admit that proper diet and stimulation do accomplish something, that pure oxygen may accomplish something, that artificial respiration will at least show the bystanders that we are doing all we can in the case; but placing ligatures about the extremities in order to retain the blood in them and prevent its return to the heart is like plugging the œsophagus to prevent vomiting.

Our object is to discourage theorizing and endless prescribing of drugs after many trials and disappointments in a disease which calls for a specific antidote yet undiscovered. Let us turn our faces in the new direction, and our energies in a field which is slowly but surely opening before us.

THE PREPARATION OF CATGUT BY FORMALIN AND BOILING.*

By A. GOLDSPOHN, M. D., Chicago, Ill.

Professor Gynecology Post-Graduate Medical School; Senior Gynecologist to the German Hospital; Attending Gynecologist to the Post-Graduate and Charity Hospitals of Chicago.

I will endeavor to present a practical summary of the results of various valuable series of investigations made, in this direction, chiefly by Europeans. While I have not been able to add anything essentially new, I have tested their conclusions by very many and varied boilings, by tests of tensile strength in the knot, by some culture tests, and by the liberal use of catgut altogether as buried suture and ligature material in all my surgical work for one and a half years, excepting for gastro-enterostomy, colostomy, cholecystostomy, suturing of intestines and shortening of uterine and ovarian ligaments intra-abdominally, in all of which the best of fine silk was used.

The sovereign sterilizing agent for any tissue, fabric, or implement is that particular combination of heat and moisture that we have in boiling water at ordinary altitudes, and next to that is a dense current of streaming steam of maximum humidity; that is, not superheated or under pressure. Any non-destructive increase of temperature alone beyond 212° F. is not at all valuable as a germicide in comparison with the peculiar penetrating and dissolving effect of water combined with heat at its boiling point. This principle, established by Robert Koch, has never been shaken, and, as he told us, we find that a number of substances like xylol, cuminol and numerous oils, things not miscible with water, and also some kinds of alcohol, all of which have higher boiling points than water has, are, nevertheless, much inferior germicidal boiling media to water. Indeed, they seem to contribute very little, if any, germicidal virtue in themselves, for the catgut in these media must be submitted to nearly the same degree of heat and for nearly the same length of time as it must be in dry heat in order to become sterile. Next to water, the most admissible and potent germicidal boiling medium for catgut is a combination of 85 parts absolute alcohol and 15 parts of distilled water. According to E. Saul,[1] who discovered this, and R. Schaeffer,[2] who adopted it, the killing quality of boiling absolute alcohol is considerably enhanced by the addition of 15 per cent. of water. The former of these investigators adopts it with the addition of 5 parts of carbolic acid and only 10 parts of water for boiling catgut. He regards this as adequate, although it kills only pus microbes and others of moderate resistance. R. Schaeffer adopts the above mentioned liquid as a boiling medium, with the addition of ½ per cent. of bichlorid of mercury and obtains the highest obtainable sterility by boiling the gut in it for fifteen minutes. The gas formaldehyd was discovered in 1868 by A. W. Hoffman.[3] Its seemingly great germicidal quality as a gas or in 40 per cent. watery solution (formalin), and its seemingly great value for the disinfection of infected apartments, wearing apparel and implements that are too severely injured by all other antiseptic or disinfecting agents—these valuable qualities were brought to light chiefly by Loew,[4] Buchner and Segall,[5] Aronson,[6] Trelat,[7] Stahl,[8] Berlioz[9] and Trelat, Lehmann[10], and Gegner.[11]

Berloiz and Trelat discovered that particular quality of formaldehyd, among others, which is the principal feature of its value in the preparation of catgut, namely, that it unites with gelatin and albuminous substances, and forms compounds which are insoluble even in boiling water.

A knowledge of this fact, and of another, that it fixes and preserves the cellular elements of anatomical specimens very nicely, paved the way to a real conquest in the catgut question, namely, to make it possible to *boil it in water.*

In the years 1895 and 1896 three contemporaneous and apparently independent series of most creditable scientific investigations were conducted, elaborating this important principle—one by F. Hoffmeister of Tuebingen, one by Halban and Hlawacek of Vienna, and another by Cunningham in the Physiological Department of Columbia College, New York. The three formulæ which were adopted as standard procedures by these respective investigators differed only in minor details, but agreed in the essential features of hardening in formalin, and sterilizing by boiling in water for about fifteen minutes. In general, this manner of preparing catgut is known as the method of Hoffmeister, whose detailed procedure is calculated to give the best results, according to my own experience.

It is necessary to have good, imported, so-called, German catgut.

The procedure which I have adopted after many trials is that of Hoffmeister with some modifications.* The important features in the technique of this procedure are:

*Read before the Chicago Medical Society, October 27, 1897.

*I am indebted to Mr. Hollister, of Truax, Green & Co., for assistance and numerous favors extended to me in this work.

(1) Winding of the gut, only one size on each spool, not too closely and in a single layer, with as much tension as possible on sections of heavy glass tubing of about an inch in diameter and four to five inches in length, with fused edges. Each end of the gut, whether it be of one piece or several tied together, is tied to a strong double sewing thread and is securely fixed by being wound under a sufficient number of turns of this thread near the ends of the glass bobbin, to prevent it from shrinking and swelling in the watery menstrua in which it undergoes very great tension.

(2) These spools are then placed in a 4 per cent. solution of formalin ($1\frac{3}{5}$ per cent. formaldehyd) for 48 hours, or they may be treated by formaldehyd gas, dry for about the same length of time, in a tightly closed receptacle containing a generating lamp burning wood alcohol. But it is fully as well and much simpler to formalize it in the watery solution.

(3) From the formalin solution the spools of gut are next transferred directly, without much exposure, to the drying effect of air, into another jar, which is placed under a hydrant, to whose faucet a rubber tube is attached that reaches to the bottom of this jar. A current of water is thus secured from the bottom of this jar upward, which washes out the excess of formalin in the gut, during 24 hours.

(4) Next the deformalized spools are placed into a sterilized jar containing a solution of pyoctanin (methylen blue) in sterilized water 1 to 1,000. in which they are boiled for twenty minutes in a water bath. In the same water bath, or some other vessel, also as many wide-mouthed pint bottles, with ground glass stoppers, as there are different sizes of gut to be used, are also boiled together with several long forceps to do all the future handling with.

(5) At the expiration of 20 minutes of actual ebulition in the catgut jar, the spools are taken out, *are never touched by the fingers of any one whatsoever*, but handled with the sterilized forceps, the excess of free pyoctanin is rinsed off in sterilized water, and then each spool is placed alone in one of the sterilized glass-stoppered dispensing bottles and there preserved in commercial alcohol, drawn directly from the barrel, without any intervening bottles or graduates.

(6) These dispensing bottles are kept wrapped singly in sterilized towels, and placed together in a clean case, with a cover that fits well, and can be readily lifted off. During an operation those bottles that contain, each, one of the respective sizes of gut to be used, are taken out of the case, rinsed off in bichloride solution and placed in a sterilized basin about 10 or 12 inches in diameter. The glass stoppers are then temporarily removed and the mouth of each bottle is stoppered with a wad of sterilized dry gauze, alongside of which the end of the catgut thread is kept projecting and can be readily drawn out rapidly, in any desired length, without displacing anything, because it unwinds very readily from the section of heavy glass tubing of a one-inch calibre (as above directed), which in itself forms an ample counterwright. Over all a sterilized towel is spread during intervals between successive operations or pauses in the same operation. Thus, only a few inches of gut ever leave the preserving liquid, that are not used and are cut off finally when the glass stopper is returned to each bottle, and absolutely no gut that is not used need ever be fingered by any one.

Skin and mucous surfaces, and of these the hands and finger-nails in particular, of any one, are the most dangerous implements necessarily employed in our surgical acts; they are the suspicious weak spot in our otherwise nearly perfect aseptic technique—even after the most efficient admissible cleaning, because we cannot boil or steam them. This being generally admitted, I think, then, any process of preparing catgut or other ligature or suture material is seriously faulty that directs or requires fingering of that material after it has passed the principal sterilizing act or element in its preparation. In this connection I must criticise the Hoffmeister method as modified and published by Professor N. Senn[12]. The unwinding and arrangement of it in convenient coils or lengths for use that he directs, I regard as quite objectionable. Furthermore, the addition of iodoform to alcohol as a preserving liquid without the use of heat, is, to my mind, not desirable, because iodoform, as we generally use it, is itself not sterile, and because it dissolves in cold alcohol so very slightly as to do no good, and because any germs conveyed to the alcohol by the iodoform are, by it, only prevented from multiplying, but probably not killed.

For about three months I worked with catgut that I boiled in absolute alcohol, to which 1 per cent. iodoform and 5 per cent. glycerin had been added, the boiling being done under pressure in a bottle whose ground glass stopper was securely tied and wedged down and the bottle placed in a tested steam sterilizer long enough to ensure at least 212° F. in its contents for forty-five minutes. But the practical results were scarcely as satisfactory as with the gut that is boiled in water with pyoctanin for twenty minutes, as above directed. Experi-

mentally, the latter method, after formalizing and deformalizing, will kill the spores of higher resistance, as those of anthrax and the bacillus subtilis of Flugge; while Schneider[13] (Sieburg) could not obtain certain sterility by boiling catgut in 95 per cent alcohol under pressure for one hour at 100 degrees centigrade.

In this connection we must note very carefully that the definite germicidal capacity of formaldehyd, according to more recent researches than those above alluded to, is not so great or certain or quick in action as the rather prevalent opinion in regard to this seems to be. The readjustment of the former excessively high estimate of the germicidal value of bichloride of mercury, which was brought about by the salient corrective procedure of Geppert,[20] is now about to take place also in the domain of formaldehyd, by neutralizing this germicide in formalized objects with ammonia before applying the culture test. This was done by R. Schaeffer,[14] to whom it was probably suggested by K. B. Lehman, who employed it to neutralize the odor in formaldized clothing.

Schaeffer placed infected threads in 2 per cent. formalin solution that was made alkaline by a few drops of ammonia, and it required from ninety-five to one hundred and thirty-four days before they became free from germs Again, in some fifty experiments he took infected threads, treated them amply with formalin, washed them off in water merely, and then placed them in a culture for eight days. No growth taking place, he took them out and washed them ten minutes in a dilute ammonia liquid and then returned them to the same culture medium, when the germs originally used would come to growth—thus showing that the formalin carried over with the threads had prevented the growth of the organisms, but had not killed them. Halban and Hlawacek also noted that formalin would prevent growth of germs in culture media, but when the same germ carriers were vaccinated into animals, the latter died. And they conclude that if formalin alone can sterilize (Kossman[16]) catgut at all, it must act on it in a manner to destroy it for use. And even in 1893, F. Blum[17] (Frankfort) came to the conclusion that to kill microbes certainly by formalin, relatively strong solutions of it must act for a long time, usually for seven days; but that extremely weak dilutions, as about 1 in 10,000, sufficed to inhibit the growth of organisms, and had a tendency to kill very gradually.

These facts being known, we must not depend on formalin to sterilize catgut, but simply to harden it, so that it may be boiled ad maximum. That this maximum boiling of twenty minutes may be possible, it is necessary to remove all excess of formalin from the gut by prolonged washing in running water previously, because without this it can usually be boiled in water only for fifteen minutes.

But the vexatious question is now settled, that catgut can be certainly sterilized, for we can now boil it in water, the ideal menstrum, as long as the adherents of silk need, or usually care to boil that, and the advantages of absorbable ligatures are too obvious to require further comment. However, there is one slight objection to catgut remaining, which arises from the ptomaines which it may, and sometimes does, contain. On this subject, Dr. Edmondo Orlandi, in Turin, published researches in 1895, and Professor Poppert, of Giessen, likewise toward the close of 1896. Both affirm the occurrence of slight or non virulent suppuration limited to the immediate vicinity of the gut, not producing any systemic disturbance, and usually subsiding without any marked detriment locally. However, to avoid this objection partly, I am now having all catgut soaked in ether previously, for forty-eight hours or more, to extract the fat, hoping, with this, also to get rid of some of the ptomaines that may be present.

My reasons for preferring the catgut prepared by formalin and boiling, are, first and chiefly, because it stands the crucial culture tests that have been applied to it by its founders, which is not true of any other former method, that of von Bergman not excepted, for Braatz[21] cultivated anthrax spores of only moderate resistance in abundance in catgut prepared by that method. Secondly, because of the immense satisfaction to a surgeon, derived from a knowledge of the supreme germicidal capacity of water boiling for twenty minutes. Thirdly, because this catgut is hardened enough to answer the purposes of chromicized catgut reasonably well, without being too hard. From clinical observations, my impression is that the smaller sizes hold for from seven to ten days, while the larger sizes, as No. 6, used on pedicles, etc., hold for about fourteen days.

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TUBERCULIN IN DERMATOLOGY.*

By A. RAVOGLI, M. D., Cincinnati, O.

The article begins by reminding the doctors that tuberculin has not been fully appreciated as a curative means; it has been too much looked upon solely as a means to establish the diagnosis. The coccus and streptococcus infections are nearly always associated with the tubercle bacillus, and causes the breaking down of the tubercular nodules. The action of tuberculin is directed to the tubercular tissues, upon which it displays its potent effects.

The skin offers a very appropriate field for the study of the action of tuberculin in tubercular affections, clearly showing the changes in the affected places. On this point he referred to the studies of Goldman and others as to the changes in the tubercular tissues after the use of tuberculin—the irregular appearance of the protoplasm in the giant cells, the necrotic appearance of the infiltration cells, and the large amount of the leucocytes crowding upon those cells and causing a regressive process.

He recalled the affections of the skin, which are now comprehended in the family of the tuberculoses, and accepted the distinction proposed by Hallopeau between bacillaries and non-bacillaries—some produced by the tubercle bacillus present in the tissues of the skin, and others as the result of toxins of the tubercle bacilli concealed in other organs of the system. He explained the multiplicity of forms of the tubercular cutaneous affections, from the complexity of the different organs and tissues composing the skin.

He discussed the question, How can we establish that an affection is really the result of tuberculosis? The best proof is the finding of the tubercle bacilli in the tissues of the skin, although sometimes it is very hard and difficult to demonstrate it in the affected skin.

Inoculation in an inferior animal is also a very good means of proof of the tubercular nature of the affection, but very often this investigation is surrounded by many difficulties, and it requires several days to obtain a positive result.

The tuberculin injections as a diagnostic means have been found by the author of great help. He spoke of the reaction following its application, both general and local. He referred to the works of F. W. White, of James T. Whittaker and others, who have applied tuberculin, both as a diagnostic and as a therapeutic agent. He referred to two cases of *lupus erythematosus agminatus*, diffused on the face, body and extremities, lasting from two to four years. Every treatment employed had failed to produce any improvement.

Starting from the point that lupus erythematosus is a tubercular affection of the skin, tuberculin injections were resorted to. The first injection, 1 mg. of the old tuberculin, caused in both cases general reaction, with fever ranging on 102° F., and local reaction, swelling and redness of the affected skin.

After reaction had subsided, improvement of the eruptive spots was so very remarkable as to lead him to advise continuation of the use of the remedy. After a few injections, the general condition of both patients and the local appearance was greatly improved.

It was deemed advisable to try the *new tuberculin, T. R.*, which was done in one case. The first injection was with $\frac{1}{500}$ mg. T. R. produced a slow reaction, going on for nearly two days, raising the temperature to 105° F., with swelling of the sublingual and cervical glands. High fever lasted nearly one week, and for about ten days the patient could not get other injections. Ten more injections were followed by irregular reactions, and the malaise and pain in the joints compelled him to discontinue the use of the new tuberculin. The eruption appeared worse, with formation of pustules on the affected surface.

The *old tuberculin* was used again with more satisfactory results.

He referred to a case of ichthyosis istrin [?] in a 14-year girl, where *old tuberculin* was used with perceptible reaction and great improvement on the eruption.

The author gives his conclusions as follows: "I have used tuberculin with satisfactory

* An original abstract of a paper read at the meeting of the Mississippi Valley Medical Association, Louisville, Ky., October, 1897.

results in several cases of ulcerative tuberculosis of the skin, and in two cases of lupus erythematosus; both of these are greatly improved. Equally, a case of ichthyosis istrin [?] received great benefit from the use of this remedy.

"From my experience I must say:

"1st. That tuberculin is a great help in dermatology, both as a diagnostic and as a therapeutic means.

"2d. That in lupus erythematosus, it acts remarkably well as a systemic treatment, but, of course, the locality must be treated with external applications.

"3d. That in a large number of instances, I never had any bad effects; and the condemning of tuberculin for fear of spreading tuberculosis is absolutely absurd.*

"4th. That the *old tuberculin* has given more regular reaction, both general and local, than the new tuberculin; and thus far I have found in dermatological work that the *old* is preferable to the new tuberculin.

"5th. That in cases where no other remedy has any beneficial influence, and the tuberculin causes the disappearing of the eruption, the healing of the ulcers, and improvement of the general condition, this remedy has to be acknowledged as a great remedy.

"6th. That if relapses occur, after ceasing the use of tuberculin, the remedy must not be blamed. It must be used for a long time, in small doses at long intervals, until recovery is assured."

Correspondence.

Mr. Editor Virginia Semi-Monthly:

Dear Sir,—Within two or three days I have received from my publishers, the W. T. Keener Company, Chicago, your issue of October 8th, in which I am charged with inconsistency, the charge being based upon an incorrect and incomplete quotation from my little book, *Principles of Medicine.* The incorrectness consists in the omission of the word *that* in the fourth line of your notice (page 401): the incompleteness is due to not having begun the quotation at a point which would show what the omitted word *that* refers to.

I see clearly that medical practice should not be only such as is dictated by *similia similibus curantur.* To show "that one can consistently accept homœopathy and at the same time accept whatever else is good in medicine" was a large part of the purpose of my book; the rest of my purpose was to show, by accurate definitions, "just what is the cure sought in any given practice of homœopathy," and to show wherein that cure differs from any that we can undertake in rational practice, or hope for (unless relying wholly on chance) in empiricism. If there is in medicine any place for homœopathy, I feel confident that such definitions as I have attempted will assist many to recognize that place. I think, too, that it is well to discuss the whole matter as one of *opinion.* (See page 27 of my book. I regard this subject as of sufficient importance to justify my asking you to publish this letter; it may correct some erroneous impression which the notice of my book has made upon your readers.

Respectfully yours,

CHAS. S. MACK, M. D.

La Porte, Indiana, Oct. 23, 1897.

[*In this connection, we must again call attention to the word of caution given by Drs. Trudeau and Baldwin, with reference to the probable failure of the manufacturer to extract the bacilli from some of the new T R. tuberculin. See page 468, Nov. 12, 1897, *Va. Med. Semi-Monthly.*—EDITOR.]

Proceedings of Societies, etc.

CLINICAL SOCIETY OF ST. JAMES DISPENSARY.

Stated meeting held November 5th, 1897.

Dr. Eugene R. Corson read a paper [see page 521] on

Pneumonia Toxæmia versus the Theory of Obstruction in Pneumonia.

DISCUSSION.

In the discussion of the paper on this subject by Dr. Eugene R. Corson, *Dr. W. E. Fitch* thought that Dr. Corson has misinterpreted the paper in question. Prof. Smith undoubtedly regards pneumonia as an infectious disease, caused by microörganisms. We have long regarded pneumonia as an acute specific infectious disease, with local manifestations in the lung. A pneumonia following influenza is of mixed infection; the micrococcus of pneumonia invading a lung already fertilized with the bacillus of Pfieffer, will result in the production of toxines, producing a pneumonia of different type to that treated before la grippe was prevalent.

Predisposition and lack of normal tissue resistance are essential factors in the causation of

pneumonia. The disease is often developed under conditions similar to those which attend the development of cerebro-spinal meningitis, tetanus and diphtheria; atmospheric conditions are acknowledged factors.

Levy reports (*Amer. Jour. Med. Sci.*, Aug., '91) a case of catarrhal pneumonia of congenital origin. The mother died of fibrous pneumonia, complicated with pleurisy and pericarditis; the chest was aspirated and a seropurulent fluid removed, which gave cultures showing the diplococcus of Frankel and Weichselbaum. Inoculations made with this fluid demonstrated the presence and potency of the germ. The child of this woman, born 36 hours before her death, died two days after birth of catarrhal pneumonia, and autopsy demonstrated that the pneumonia from which the child died was infectious, and had persisted for at least 36 hours before its birth. Cultures made from fluid drawn from the left ventricle of the heart and from the right lung, demonstrated the presence of diplococci; the microörganisms were especially numerous in the blood, and the conclusion was that the infant received its infection through the mother.

Dr. Townsend reports (*Boston Med. and Surg. Jour.*, March, '91) a list of cases, of which, though many of them may be coincidencies, some, at least, bear out the idea of infectiousness as regards acute lobar and catarrhal pneumonia.

Prof. Smith still regards pneumonia as an obstructive pulmonary disease, and if broncho and catarrhal pneumonia do not cause pulmonary obstruction, he would like to know what would.

Prof. Smith, in a paper before the Berlin Medical Congress, 1890, called attention to interference with the circulation produced by the engorgement of the lung; the *right heart*, and not the heart as a whole, was the main cause of exhaustion, and the character of the second *pulmonary sound* was a better guide to the condition of the heart than the pulse. He says (*N. Y. Med. Rec.*, May 9, 1896), as regards the valve sound of the pulmonary area, that its intensity may be looked upon as a measure of the degree of obstruction to the blood current in the lungs; but he does not say that the radial pulse does not give reliable indications as to the gravity of the heart's condition.

Dr. J. M. Anders (*Med. Rec.*, July, '92) says pulmonary obstruction is produced by the presence of an exudate, acting as a local barrier to the integrity of the circulation.

Dr. Corson states that the blood, and not the lungs, is the tissue in which the pneumonic battle is fought. Take it for granted that it is in the blood, would we not as soon expect to find the local manifestation of the toxæmia in Peyer's patches, or in the peritoneal cavity, as in the lungs? If experience has taught the speaker anything, it is that pneumonia is an inflammatory disease of the lungs. If the lung is not the field of battle in pneumonia, why do we have the congestion and engorgement in the lung tissue? Why not in the great toe, or little finger? In his cases, the fight was in the lungs, between the obstruction and the patient's vital powers; and if a patient's heart fails not he always wins the battle, by overcoming the pulmonary obstruction. Against the toxæmic theory are the following arguments: 1. More than one germ is found. 2. Patients are liable to subsequent attacks. 3. It is not contagious. 4. There are no prodromata. 5. There are no sequelæ. 6. There is a direct crisis, unless perifiltration or abcess results. 7. Antiphlogistic treatment often aborts the disease.

Dr. Corson, in his disappointments in the action of drugs, says they are often *useless*, and longs for advances in serum therapy to give a specific antidote (antipneumotoxin, yet undiscovered). He further advises not to touch the therapeutic button, and expect drugs to do the rest. As yet, we know of nothing to take the place of drug treatment. If we exclude cardiac and respiratory stimulants, dietetics and hygiene, and say to patients: "We are sorry for you, but will wait for the discovery of the antipneumotoxin," the mortality in pneumonia will be increased beyond calculation; but with judicious administration of medicines above referred to, the mortality of pneumonia will be very slight. We have been treating pneumonia for seven years with drugs, and they have not proven useless. In that time we have lost but one patient out of 104 cases, and as yet we have seen no indication to curette the lung, or use the intra-pulmonary douche.

Dr. Graham said that in order to appreciate that we do have obstruction in acute lobar pneumonia, it is necessary to understand the pathological process, aside from bacteriology. In the first stage, we have all the local manifestations of beginning inflammation. The vessels become dilated and turgid in the affected portion. The capillaries take part, and project into and partly occlude the alveolar cavities, and through the walls of the altered vessels serum transudes; power of absorption seems also altered. By diapedesis the leucocytes and red blood corpuscles pass through

the vessel walls, and the extent of this exudation depends upon the degree of inflammation. The stronger the movement of the arterial blood, the more the current in the veins is hemmed, the greater the amount of exudation. This seems to explain, in a measure, the value of bleeding. In the stage of red hepatization, "some vascular cavities are still left open, and the circulation in the lung is preserved in a vicarious manner, by increased pressure resulting from the stagnant condition of the blood in the occluded vessels."*

The amount of the extravasation determines, in a measure, the probable termination of the process in this stage. When extravasation is great, it points not only to a serious vascular change, but presents a possible source of danger from sepsis, by infection from bacteria from the air; thus empyema may have its origin. In this stage we have rusty sputum—the expectoration of red blood corpuscles with altered hæmoglobin.

The micrococcus is rarely found in the blood, but the product of its metabolism (pneumotoxine) is found there. The organism is found in sections of the lung tissue in the exudate, and in the sputum. Emmerich and Fawitzky, G. and F. Klemperer, Foá and Scabia, and others, have made interesting experiments with serum therapy, and Emmerich says that it is beyond a doubt, and only a question of time when the active substance in the serum of the blood of immune animals will prove to have an ideal curative power.

Dr. John D. Paige remarked that no one who has seen phlebotomy can doubt its value. Dr. Corson compares the obstruction of pneumonia to that of phthisis. One is chronic, and the circulation slowly adapts itself, while the other is rapid and has not the same chance. He asked if double pneumonia is not more fatal than single?

Dr. Van Marter said that Dr. Corson has misunderstood entirely the paper by Professor Smith. He was not writing on "pneumonia," but about a particular condition *sometimes* seen in pneumonia—viz: acute pulmonary obstruction. The cardinal points of difference between the views of Dr. Corson and the speaker's are, briefly:

1st. He does not admit that there is a pneumonia other than that due to the pneumococcus; whereas there are several varieties, such as a simple inflammatory, nontoxic pneumonia—the traumatic; a secondary pneumonia, not due to the pneumococcus—the hypostatic; besides mixed infections. There is also seen, though but rarely, and probably not in this warm climate, what may be called "congestive acute cold" of the lung, immediately following severe exposure to very cold winds, especially where body heat had been dissipated by free indulgence in alcohol.

2d. Dr. Corson considers the wrist pulse a good and sufficient guide, and does not admit of a difference between the pulmonary and systemic circulation. In other words, he denies the existence of any factor weakening the heart excepting toxæmia. The speaker's view is that there are cases where it is all one or the other, and cases where we find blended every variety of the two causes in different proportions. Given a vigorous full blooded man, in the prime of life—suppose he gets a violent pneumonia with abrupt onset which engorges, and practically speaking, nearly solidifies two lobes of his right lung. You see him with shallow breathing, working like a steam engine, taking fifty breaths to the minute to obtain oxygen enough, and in spite of that, blue in the face and extremities—pinched, anxious look; such cases have a temperature of 105° within the first twelve hours. Now, suppose you bleed that man, abstracting eighteen ounces, what takes place? Too often to be a mere coincidence, the picture changes as if by enchantment; respirations drop to 20 or 25, color returns, temperature drops, and it is not rare to find the attack then and there *aborted*. Now, was that all a toxæmia—did the bleeding remove the poison? No; this man, with diffuse acute congestion, was not suffering with pneumococcus infection. To say that this man's pulmonary circulation was not obstructed, would be to deny the evidence of our senses; to say that any adequate idea of the work the right heart had to overcome was to be obtained by a wrist pulse, is to go counter to the laws of mechanics, as well as the "dicta" of all great observers. Dr Corson's example of patients going around the streets with perhaps a whole lung gone, as an example of free collateral pulmonary circulation, is not sound. In one case we have a sudden, abrupt consolidation without time for the collateral circulation to become established without greatly imperiling the right heart; on the other hand, we have a gradually established collateral circulation—one which any healthy or unhealthy heart could easily handle.

In regard to the question of obstruction, will Dr. Corson explain why it is that in cases dying of pneumonia, or any other pulmonary disease presenting the picture of obstruction such as

* Lichtheim Die Stoerungen gen des Lungen Kreislaufs, Seite 65.

has been drawn, on post-mortem we find both the pulmonary artery and right ventricle dilated nearly to bursting—full of very hard jelly-like clots—no serum to speak of—showing plainly that great pressure was exerted *somewhere*, while the left auricle, ventricle and pulmonary veins are collapsed—usually empty, and the left ventricle *not* dilated—is that a toxæmic phenomenon?

It is not a necessary condition of therapeutic law that to a given disease we should have a given antidote in order to combat it successfully. Where we are enabled from the very onset of pneumonia to administer in its entirety, modern treatment—the nursing being in intelligent hands—the mortality rate is far less than it was two decades ago. Hence, the opprobrium should not be placed on medical shoulders, but on those of an ignorant, stupid public where it belongs.

Dr. Ralston Lattimore said his opinion is evenly divided as to the relative seriousness of the theory of toxæmia and that of obstructive pneumonia. He cited two cases which came under his care.

1. Man, 21 years old; strong and well built, previous history good. Tri-lobar pneumonia, involving middle and lower lobe of left lung. Fourth day, fever 104 105°; pulse, 80 100, good; respiration, 100 and labored; patient cyanosed. Seventh day, pneumonia defervesced, patient made uninterrupted recovery. Case of obstruction with low grade of toxæmia.

2. Man, 19 years old; driver of ice-wagon. Tri-lobar pneumonia; same lobes effected. Fourth day, temperature, 104-105°; respiration, high; pulse, 120-140; patient somewhat cyanosed. Fifth day, at 5 o'clock P. M., he saw patient. Temperature was high, heart action rapid and labored, though pulse full. Over unaffected portions of both lungs was marked pulmonary œdema—large, moist râles. After due consideration, he bled him (median basilic vein, left arm) until radial pulse was soft (20 oz). Color soon began to improve, œdema of lungs began to disappear, and in an hour the œdema was entirely gone. At the same time the patient received vigorous stimulants, and nitrites in large doses (hypodermically). Eighth day, pneumonia defervesced and recovery uninterrupted, except by some effusion in left chest, which was soon absorbed.

The first case is one of obstructive pneumonia. The second, one of obstructive pneumonia+toxæmia. In the second case, the heart was so poisoned that it was unable to cope with the obstruction in the lungs. The phlebotomy was "life-saving" by giving to the weakened heart less volume of blood to pump through lungs.

The following is a striking example of how the heart can accustom itself to a gradually forming obstruction, without giving subjective symptoms or even change in its action: Old man, chronic nephritis, bedridden, hypostatic pneumonia; right lower lobe solid; absolutely no symptoms; pulse, temperature and respiration normal; no pain; no toxæmia.

One more case illustrates beautifully how much the heart will be embarrassed, and even cease to functionate, when obstruction is large, and forms rapidly. Patient came into hospital on a Saturday afternoon, having a very acute pleurisy with effusion, left side; apex beat pushed over to right. Attending physician decided to wait till following Monday to aspirate. Patient died suddenly Sunday afternoon from cardiac failure, due entirely to embarrassed heart, on account of decreased area of pulmonary circulation.

We all remember cases of pneumonia where the area of consolidation was not especially large, though mortality high, cases in which the toxine evolved was of a highly virulent nature.

To thoroughly define his position, he claimed that there are three classes of cases: 1. Mortality due to obstruction; 2. To toxæmia; 3. To obstruction plus toxæmia.

Dr. S. J. Lanier, in defense of Dr. Smith's paper, said that in pneumonia there is necessarily an extra amount of blood carried to the inflamed area. Where there is swelling from active inflammation there we must have obstruction to the circulation. Pneumonia means inflammation of lung tissue; hence, it does offer resistance to the blood current, and that resistance must be overcome or felt by the heart. Inflammation attendant upon pneumonia with the relation of the inflamed area to the circulation and aeration is different from that in any other part of the organism. Upon the lung depends the blood for oxygenation; but the blood in pneumonia must necessarily be deprived of a certain amount of oxygen, or the heart is required to do extra work to send enough blood, free to circulate, in the healthy lung substance, in order to compensate for the obstruction to the air currént in the diseased lung; Dr. Corson says "the blood refuses to pass through an obstruction when a free channel is open." But there is not a free channel for the extra amount of blood required to pass through the collateral branches, in pneumonic, or any other inflammation; it is only by stretching the vessels, or by increasing the force from

behind that there can be compensations for the obstruction; the blood scarcely goes through the highly inflamed spot any more than air enters the vesicle; therefore, the disturbance in circulation is dependent largely upon the character and extent of consolidation and obstruction. Dr. Corson further says: "If obstruction were the chief danger in pneumonia, the severity of the case would depend entirely upon the amount of lung involved, which by no means holds good, as many fatal cases show a small involvement of lung tissue, and many cases recover where the amount of lung tissue involved is great." This remark does not bear close inspection, or rather his argument is untenable; for granted that the pneumonic spot is a focus of infection, would not a large surface of invasion, prove a more powerful enemy than a small battery? Again, authorities agree nearly as a whole with Loomis that, "the prognosis is greatly influenced by the extent of the pneumonia." Loomis was regarding the *spot* of *pneumonia*, for he adds, "Double pneumonia is not often recovered from, and pneumonia of an entire lung is more dangerous than when only a single lobe is involved." "The more feeble the patient at the time of the attack, the less are his chances of recovery." Another author says, "the prognosis depends more upon the age of the patient than upon any other single element."

The ages of greatest danger happen to be the very young, and the very old—just at ages, in one, when the heart is too feeble to do much extra work, and in the other when the heart is already wearing out. Dr. Corson further says that the vigorous have no better chance of recovery than the delicate. If this be true and his theory of toxæmia poisoning is correct, then pneumonia must necessarily involve a paradox; for we know that in general a strong man has a better chance to withstand the ravages of disease than has the weakly and cachectic; and as to the negro being a ready victim to pneumonia, the condition is probably due to their filthy and unhygienic surroundings, with very poor nursing and an unsuitable dietary.

One important reason for advocacy of the obstructive causes of heart failure in pneumonia, is largely made up from statistics which show that pneumonia is most fatal in complicating diseases which much weaken the heart and disturb general nutrition. Of complications most fatal to pneumonia patients, is alcoholism, and we certainly understand why a heart made flabby and fat by alcohol would easily wear out under excessive work. Again, Bright's disease is extremely dangerous to patients with pneumonia. Furthermore, pericarditis, hypertrophy and dilatation of the heart share a large part in the complications of this disease; and assuredly these causes would cripple any heart. A prominent author has remarked that a careful study of the complications in pneumonia will show "that they all exert a direct influence upon the heart, diminishing its power and crippling its action by obstructing the blood-current from the right ventricle toward the lungs." In all infectious diseases complicating pneumonia, the real danger is the liability to increased heart failure, from the presence of poison of their own kinds which vitiates the blood and weakens the already over-taxed heart.

Hartshorne, in 1874, wrote: "Is it a local affection causing fever, or is there a blood disease first producing both the fever and the local manifestations? In traumatic fever, it is plainly the former. In other cases, after exposure, we may suppose it to be both, but the primary step of the actual inflammation is probably the local disturbance in circulation; functional action, and nutrition." We see in this the idea of toxæmic pneumonia, and also a strong notion of a local trouble alone.

The disturbance in the pulmonary circulation not only impairs the blood, but the heart itself suffers from the want of good blood, and is consequently made weaker from the amount of work it is forced to do.

Bacteriology teaches that various germs (whose ptomains become toxæmic under certain conditions favoring their growth) are commonly found in the throat and nares of healthy persons. The diplococcus, said by Weichselbaum and Welch to be present in nearly every case of pneumonia, is found in other places, in the saliva, while the pneumococcus is found in only 5½ per cent. of cases of pneumonia. With these facts, is it not possible for an inflammation, congestion or irritation to begin first in the lung, and the infection start as soon as the soil becomes suitable for the growth of the special germ, and then the case presents the symptoms of pneumonia?

Dr. Corson said that pneumonia is "a general toxæmia, with a local manifestation in the lung;" whereas all cases of pneumonia (*but not all cases of lung inflammation*) are produced by some morbific agent (probably of diplococcus pneumoniæ,), at the seat of a recent congestion or irritation in the pulmonic tissue, or fine air tubes. Having gained entrance to a suitable field for growth, we soon have such a crop of these invaders—the blood vessels being favora-

ble to their entrance—that they make a rapid circuit through the blood current, and then, and not until then, do we have general infection, which gives us true toxæmic pneumonia. With all authorities, there seems yet to be a condition back of all that remains unexplained! The crisis of pneumonia brings about a complete change in the condition of the patient within a few hours, changing the scene from one of distress, anxiety and suffering, to one of quietness, comfort, and unfortunately too often, of complete collapse. This shows that the system has been under the influence of some powerful toxic substance which has been suddenly overcome, or that the nerve centre could bear the attack no longer, when a lightning-like change takes place in the chemistry of the blood, and the poison is destroyed. If, at this juncture, nerve exhaustion is not the result, the circulation and secretions take on their functions, and the damage and debris are soon removed. If serum taken from infected animals that have become immune can cut short or cure disease from which it originated, why canhot nature, in the laboratory of the organism, manufacture an antidote to the poison which has taken root in her tissues.

Dr. Corson has made clear the fact that in pneumonia the depraved condition of the blood, with the poisoning of the nerve centres, has more to do with the deaths of patients with pneumonia than all other causes combined. The pulse at the wrist is, in nearly all cases of sickness, the most reliable guide to the condition of the heart muscle. He doubts the advantage of pure oxygen in the treatment of pneumonia except as it causes, by forced breathing, an expansion and larger surface of lung for aeration. By deep forced inhalation we would get the lungs to take up all of the oxygen that nature intended for them to utilize from a well ventilated atmosphere.

Dr. Corson, in concluding, said that Prof. Smith has written a more recent paper entitled "*The Clinical Divisions of Pneumonia*," where he has laid himself open to more criticism. He recognizes three types of pneumonia—the sthenic, the asthenic, and the obstructive. He places the obstructive type last, and we hear less of obstructive in this paper than we did in his first one, although this paper treats entirely of pneumonia, while the first one was more general. No one can find fault with the divisions into *sthenic* and *asthenic*, but when an obstructive type is added, he changes *per saltum* the whole basis of his classification and violates every principle of biological and pathological classification. Prof. Smith fails to show where in the pneumonic process in this type differs so radically from other types as to offer more obstruction. Is there less obstruction in the sthenic and asthenic types? Does not his obstructive type show throughout asthenic symptoms? He does speak of more general congestion and œdema and liquid râles, but these naturally are the *result* of the weak heart, which the patient had before the attack of pneumonia, made even weaker by the acute disturbances. His clinical picture of the sthenic and asthenic types is distinct enough, but his obstructive type shows no clinical picture different from the asthenic. But he must still retain a niche for his pathological fetish. Has any member of this society ever treated an attack of acute general pulmonary congestion and œdema, with the characteristic picture, never to be forgotten, of cold sweat, cyanosis, intense dyspnœa, frothy and liquid expectoration, without a history pointing to a weak and diseased heart? Dr. Corson is yet to see such a case. In this so-called obstructive type of Prof. Smith's, this pulmonary congestion and œdema outside the pneumonic exudate, is the result of the weakened heart incapable of even its normal amount of work, and which by each imperfect beat, is building up its own obstruction and encouraging its own destruction. Why call up a hypothetical obstruction which has never been scientifically demonstrated when the most evident symptoms pointing to a weakened heart explain the whole condition? He adduces the post mortem findings in four cases, showing the right auricle and ventricle, and the pulmonary artery crowded full with a substance resembling currant jelly, as further evidence of this obstruction. Why not ascribe this condition to the weakened and dying heart? That is the one cause of it. Another assumption of Prof. Smith which we combat, and which physiology absolutely disproves, namely, the greater burden thrown on the right ventricle, in pneumonia. Foster writes: "The fact that the pressure in the right ventricle is so much less than that in the left (probably 30 or 40 m. as compared with 200 m. of mercury), is due, not to difference in the quantity of blood in the cavities, but to the fact that the peripheral resistance which has to be overcome in the lungs is so much less than that in the rest of the body." It stands to reason that the peripheral resistance in the entire circulation of the blood is increased by the general conditions existing in pneumonia, and all the evidence points to the left ventricle having to overcome in pneumonia five or six times more obstruction than the right ventricle. Whatever

increased resistance may exist in the pulmonary circulation is due to the same conditions causing increased resistance in the systemic circulation, rather than to the area of hepatized lung. And now to answer those gentlemen who have criticised the paper.

Dr. Fitch speaks of pneumonia as not being contagious, as followed by sequelæ. Osler pointed out an epidemic form of the disease, and records several persons in one house taking the disease, in one case as many as ten. Dr. Fitch speaks of his own small mortality in the treatment of over one hundred cases. One individual experience is worth nothing in the matter. Dr. Corson lost the last five cases in his own practice. Figures up in the ten thousand must be used in deciding the question of maladies and results of treatment. Pneumonia still stands as one of the most fatal of our acute diseases, and has probably shown less yielding to modern improved methods in the sick room than any other acute infectious or contagious disease.

Dr. Graham speaks of the absence the pneumococcus in the blood as discountenancing the toxæmia. This is certainly contrary to the teachings of bacteriology. It is the toxine that causes the toxæmia, and mostly toxæmias show no germ in the blood. Dr. Graham did not see the point of the failure to diagnose pneumonia by failure to percuss and to auscultate. Of course pneumonia is diagnosed by percussion and auscultation. What Dr. Corson wished to show was that you may have a lobar pneumonia with no constitutional symptom to suggest an examination of the lungs. Dr. Lattimore's two cases of double pneumonia—one showing little or no toxæmia, and the other great toxæmia—furnish as good evidence as he could wish to strengthen his position. Here are two cases with a very large area of lung involved, yet shaping their character and course by the patient's susceptibility to the pneumonic toxins. If the obstruction is the important factor, why does it not control the type when three lobes are affected? The phlebotomy in the second case relieved the general circulation and helped to cut short the local inflammation in the lung.

Dr. Van Marter and the speaker must agree to disagree; we are looking at the question from two different standpoints. When there is fever and increased heart's action and localized congestion in any part of the body, there must be increased labor thrown upon the heart, but this increased work affects the entire heart; that part of the heart having the larger work to do, the larger area to supply with blood, has the larger part of this increased work. He, therefore, rejects *in toto* Prof. Smith's idea of the greater burden falling upon the right ventricle. This idea of obstruction is as nothing in comparison with the toxæmia. It is this toxæmia which teaches the treatment so uncertain and so unsatisfactory. It is well occasionally to find out how much we possess which is reliable and genuine, and how much is imitation. If this obstructive theory dies hard with Prof. Smith, its days are numbered nevertheless. It never did any good even as a working hypothesis. We have something better to take hold of even if a specific for pneumonia still awaits a discoverer.

Book Notices.

System of Medicine by Many Writers. Edited by THOMAS CLIFFORD ALLBUTT, M. A., M. D. LL.D., F. R. C. P., Regius Professor of Physic in University of Cambridge, etc. *Vol. I.* Royal 8vo. Pp. 978—xl, on **Fevers**; and *Vol. III*, Pp. 1,001, on **Diseases of Obscure Causation. Alimentation and Excretion.** New York: The Macmillan Company. 1897. Price, $5 per Volume.

This great *System of Medicine* is being issued in two sets—one of *six* volumes, *without* the work on Gynecology; the other set is to consist of *seven* volumes, in which the work on Gynecology is included as Volume II. In this seven-volume set, what is Vol. II. of the six-volume set, becomes Vol. III., etc. Our notice refers to the *six volume set.*

The more we examine the three volumes issued to date, the more are we impressed by their easy thoroughness of treatment of the subjects in hand. The scope, too, of this *System of Medicine* is more extensive than is usual in such works. Thus, we find in Vol. I., distinct chapters on Medical Statistics, on Anthropology and Medicine (which section, by the way, contains much information of frequent use to the practitioner), on Temperament, on the Laws of Inheritance in Disease, etc. We know of no one book or *System* in which so much of constantly wished for and useful information is contained as in this System.

Having noticed Vol. II. in our June 11 issue and again, by oversight, in October 22 issue (supposing it to be Vol. III.), we have now to note more in detail the contents of Vol. I. and Vol. III. of the six-volume set.

In Vol. I., in the Division of *Polegomena*, 490 pages and devoted to just such matters as those to which we have already referred. Inflam-

mation and Fever, and the General Pathology of Nutrition and of New Growths are treated masterly by Drs. Adami, Burdon-Sanderson, and Mott, Mr. Shattuck and Mr. Ballance. Equally able authors review the measures to be adopted in the treatment of disease. A very excellent article is the one on what the medical man has to do with life assurance. In the Second Division, after Insolation, the Infections are taken up and continued over in Vol. II., which we have already noticed. Each of the Infections is thoroughly dealt with in a manner that seems specially adapted to the needs of the practitioner. We note as among Americans who have articles in this Vol. I. such authors as Drs. John S. Billings, John K. Mitchell, and F. F. Wesbrook.

Vol. III. begins with "General Diseases of Obscure Causation," taking up rheumatism and rheumatoid arthritis, rickets, osteomalacia, osteitis deformans, acromegaly, hypertrophic pulmonary osteo-arthropathy, gout, diabetis-mellitus and insipidus, and lardaceous disease. Then follows the division on Diseases of Alimentation and Excretion—in which section there is a good article on "Shock and Collapse." Our space does not allow room for greater detail. The *System* is mostly by English authorities But we may safely assure our American readers that in the make up of each article, the contributions of Americans are given equal prominence when any item of importance has introduced by them into journal literature. For practitioners generally, there are no more valuable works published in any language. Vol. IV. is about ready for issue, and we are told that the remainder of the work—already in an advanced state—will be published with as little delay as possible.

Epitome of the History of Medicine. By ROSWELL PARK, A. M., M. D., Professor of Surgery in the Medical Department of the University of Buffalo, etc. *Illustrated with Portraits and other Engravings.* Royal 8vo. Pp. xiv—348. Extra Cloth. Beveled Edges, $2 net. The F. A. Davis Co., Publishers, Philadelphia, New York, Chicago.

This book is the re-arrangement of a course of lectures by the author delivered in the University of Buffalo. There is necessarily much unsaid, and many facts and names familiar to parties in various sections of the country that we would like to see mentioned in such a book are not referred to. When it is recalled that Dr. Arthur Jordan's History of Medicine and Surgery, *in Virginia alone*, to which the Medical Society of Virginia recently awarded the Price-Nash-McGuire Prize, will make a volume fully double the size of the one under notice, it will be readily appreciated how impossible it is to review the history of medicine and surgery of the world in even a large series of works similar to the one under notice. And yet we find in this *Epitome* mention of facts we never knew before. The history of anæsthesia is daintily given—especially as relates to ether. As time rolls by the name of Crawford W. Long, of Georgia, to whose memory the State of Georgia years ago rightfully erected a monument of marble in the costly Capitol, will come more and more to the front as the proper claimant of the honor of first using ether as a surgical anæsthetic. As full of interest as is this *Epitome* by Dr. Park, it serves but the purpose of a note-book to indicate some of the more important facts in making up the "history of medicine."

Swedish Movements, or Medical Gymnastics. By Dr. T. J. HARTELIUS, Director of the Central Gymnastic Institute of Stockholm, Sweden. *Translated by* A. B. OLSEN, M. D. *With Introduction and Notes by* J. H. KELLOGG, M. D., Superintendent of the Battle Creek (Mich.) Sanitarium and Hospital, etc. Published by the Modern Medicine Publishing Company, Battle Creek. 1896. Cloth. 8vo. Pp. 162.

There is a great future in America for medical gymnastics, technically known as "Swedish Movements." The record of cures in Stockholm and other centres in Europe counts up too many for any one longer to classify it as a "fad." The trouble is American practitioners, as a rule, scarcely know in what Swedish movements consist. This systemization began with Ling (in Sweden) about 1810, and year by year more and more of solid information is being added, so that now this form of medical gymnastics is becoming of recognized importance—especially since Dr. Kellogg has added hydrotherapy to it. While it is impossible to give a synopsis of such a work in the limited space of a book notice, we may remark that this is the text-book in all foreign schools where the Swedish movements are taught; and in this country it is only necessary to refer to many of the almost marvellous cures effected by Dr. Kellogg and his Assistants at the Battle Creek Sanitarium by the use of this method—cured patients who now are scattered all over this continent—to prove the real value of the method. Neither Dr. Kellogg, nor any one else familiar with the plan, claims it as a "king-cure all;" but in those cases where it is indicated, the "Swedish movement treatment" has proven invaluable.

Pathological Technique: *A Practical Manual for the Pathological Laboratory.* By FRANK BURR MALLORY, A. M., M. D., Assistant Professor of Pathology, Harvard University Medical School, etc., and JAMES HOMER WRIGHT, A. M., M. D., Instructor in Pathology, Harvard University Medical School, etc. *With 105 Illustrations.* Philadelphia: W. B. Saunders. 1897. Cloth. 8vo. Pp. 397. $2.50 *net.*

As a new book by new authors, this book deserves a larger space than our limits will permit. Part I (about fifty pages) is on Post-mortem Examinations; Part II, on Bacteriological Examinations—including a description of bacteriological apparatus, culture media, bacteriological examinations at autopsies, methods of studying bacteria in cultures, bacteriological diagnosis, and clinical bacteriology. Part III relates to histological methods, and is very complete. While the part on bacteriological examinations, etc., is well and accurately prepared, so far as it goes, we are afraid that the worker in bacteriology will not find it full enough in tables and in the number of bacteria studied to let him have readily at hand such information as he desires at the moment. Beyond some such criticism, nothing but commendation can be spoken of the book. It describes well, and systematically. It is a good text-book for students and lecturers. But the general practitioner would wish to find out more from books than he has inclination or conveniences or time to search for, bacteriologically.

American Academy of Railway Surgeons. *Report of Third Annual Meeting, held at Chicago, Ill., September 23-25, 1896.* Edited by R. HARVEY REED, M. D., Columbus, Ohio. Chicago: American Medical Association Press. 1897. Cloth. Small 8vo. Pp. 282.

While this volume of *Transactions* is issued nearly a year after the meeting, many of the papers are worthy of permanent record, and a wider circulation than we fear they have received. The session of 1897 is just over, and we cannot believe that better papers will be presented, but we hope they will not be so delayed as to publication. Dr. Reed makes an excellent editor—only hurry up the authors a little with their proof-sheets, etc.

Index-Catalogue of the Library of the Surgeon-General's Office, U S. Army. Authors and Subjects. *Second Series. Vol. II. B—Bywater.* Washington: Government Printing Office. 1897. 4to. Pp. 954.

We acknowledge with thanks the receipt of this constantly useful volume.

Essentials of Bacteriology. By M. V. BALL, M. D., Bacteriologist to St. Agnes Hospital, Philadelphia. *Third Edition—Revised. With 81 Illustrations—Some in Colors; and 5 Plates.* Philadelphia: W. B. Saunders 1897. Cloth. 12mo. Pp. 211. Price, $1.

This is "a concise and systematic introduction to the study of micro-organisms for the use of students and practitioners." Since so few practitioners have opportunities to study bacteriology, and desire mostly a synoptical statement of what is pathogenic and what not, and how to secure material to send to the bacteriologist for examination or culture, we take pleasure in pointing them to this small volume, which contains the "essentials" they wish to know. The alphabetically arranged tables—covering over forty pages—giving the chief characteristics of the principal bacteria—non-pathogenic as well as pathogenic—are very complete and serviceable. Of course, the student should have the book—whether to follow the professor, or to prepare for examinations.

Fifteenth Annual Report of the Bureau of Ethnology to the Secretary of the Smithsonian Institution 1893-94. By J. W. POWELL, Director. Washington: Government Printing Office. 1897. Quarto. Pp. 366.

These Reports are invaluable historical material. Papers in this volume are—1, by Wm. Henry Holmes, on "Stone Implements of the Potomac Chesapeake Tidewater Province;" 2, by W. J. McGee, on the "Siouan Indians;" 3, by James Owen Dorsey, on "Siouan Sociology;" 4, by Jesse Walter Fewkes, on "Tusdyan Katcinas;" and 5, by Cosmos Mindeleff, on the "Repair of Casa Grande Ruin, Arizona."

Surgical Hints for the Surgeon and General Practitioner By HOWARD LILIENTHAL, M. D., Assistant Attending Surgeon to Mt. Sinai Hospital, etc. New York: International Journal of Surgery Company. 1897. Board. Large 16mo. Pp. 29.

All of these "hints" represent a part of the author's experience, and their value has been tested at the bedside. It would be well for doctors to keep each of the hints or suggestions in memory when called to a case indicated by any of the observations.

Editorial.

The New Building of the University College of Medicine, Richmond, Va ,

Has been completed, and was formally opened on the night of November 24th, 1897. An immense crowd of ladies and gentlemen filled the capacious amphitheatre. After prayer by Rev. Dr. Moses D. Hoge, Dr. Hunter McGuire introduced the sculptor, Mr. Edward V. Valentine, who delivered the address of the evening. Then followed short addresses by Dr. Wm. S. Gordon, Professor of Physiology, on "The Past of Medicine;" Dr. Landon B. Edwards, Professor of Practice of Medicine, on "The Present of Medicine;" and Dr. Stuart McGuire, Professor of Principles of Surgery, on "The Future of Medicine—Its Dangers and its Possibilities." In response to repeated calls, Dr. J. Allison Hodges, Professor of Nervous Diseases and Proctor of the University College, gave a running history of the institution, stating that during the first session (1893–4) there were 118 matriculates; second session, 205; third session, 239; fourth session, 270; and now, the fifth session, there are about 290, representing fourteen or fifteen States. After these exercises, the various lecture-halls, the newly-equipped laboratories, and the many rooms for various purposes, were thrown open for inspection.

Pepto-Mangan (Gude).

Dr. Wm. Krauss, Memphis, Tenn., writes: "In Gude's peptonate of iron and manganese, we have a stable and palatable preparation, uniform in composition and in therapeutic effect." He has used it over five years with good results in anæmias, in chronic gastritis with hypochlorhydria complicating malaria, hysteria, convalescents from opium, senile debility, chronic nephritis, tuberculosis, etc. Such a report is well sustained by the experience of doctors generally all over the country.

Kentucky School of Medicine.

Dr. Martin Coombs, Professor of Physiology and Lecturer on Clinical Ophthalmology, etc., has filed an injunction suit (says *Daily Lancet*, Nov. 22) against the school to prevent the issuance of the school's catalogue without the names of his assistants. It seems that the Dean, Dr. Samuel E. Woody, refused to recognize Dr. Coombs' appointees. The whole affair, it is said, "is an outcome of the recent attempts to oust Dr. Wathen from the Faculty."

Southern Surgical and Gygecological Association.

The session in St. Louis Nov. 9–11, was profitable and enjoyable. The retiring President, Dr. Geo. Ben. Johnston, of Richmond, and Dr. L. McL. Tiffany, of Baltimore, were placed on the Judicial Council. Election of officers for the year 1897–8 resulted as follows: *President*, Dr. Richard Douglas (Professor of Diseases of Women and Abdominal Surgery, Vanderbilt University), of Nashville; *VicePresidents*, Dr. H. H. Mudd, of St. Louis, and James A. Goggans, of Alexander City, Ala.; *Secretary*, Dr. W. E. B. Davis, of Birmingham, Ala.; *Treasurer*, Dr. A. B. Cartiledge, of Louisville, Ky. The Secretary has worked hard for this Society, and it must be a pleasure to see its great success. The session of 1898 is to be in Memphis.

The Medical News Visiting List, 1898,

Is ready in its usual four styles: *Weekly*, dated, for thirty pateints; *Monthly*, undated, for 120 patients; *Perpetual*, undated, for thirty patients a week; and Perpetual, undated, for 60 patients a week. The first three styles contain thirty-two pages of text and 160 pages of blanks; the *fourth* style has 256 pages of blanks (without text). Wallet-size, flexible leather cover, pocket and pencil, any style, $1.25; thumb-index, 25 cents extra. For sale by bookstores, druggists, or directly from publishers, Lea Brothers & Co., Philadelphia and New York.

Change of Time of Spring Session, 1898, Medical Examining Board of Vtrginia.

The secretary, Dr. R. S. Martin, Stuart, Va., authorizes the announcement that the Board will hold its spring (1898) session for the examination of candidates for license to practice in Virginia, in Richmond, May 24, 25 and 26—instead of the days heretofore published The Board itself will meet at 8 P. M., May 23d, for executive work. The examinations will begin at 9 A. M., May 24th.

The Serum-Therapy Collective Investigation Committee

Of the Richmond Academy of Medicine and Surgery has received about 75 replies from the 1,000 circulars sent to Virginia doctors. Even if the doctor has not resorted to serum-therapy in any case, it is useful statistical information to the committee for him to say so on or before December 25th, 1897.

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Original Communications.

A STUDY IN EPILEPSY.*

By WHARTON SINKLER, M. D.,
and
F. SAVARY PEARCE, M. D.,
of Philadelphia, Pa.

The history of this disease is ancient and of little interest; suffice it to say, that it is on the increase.

DEFINITION.—Epilepsy is that form of eclampsia which has become a more or less persistent phenomenon. It is also a condition of constant irritability of the cerebral cortex, in addition to which it is characterized by attacks of partial or complete loss of consciousness, attended with or without convulsions. The latter may be general or focal (Jacksonian), essential, symptomatic or organic.

It is important to remember that epilepsy is a continued disease, and that the "*attack*" is only a part of the state of the patient. The latter may consist of momentary loss of consciousness, stare of the eyes or slight muscle rigidity (*petit mal*), or may be attended with partial or complete loss of mentality, followed by tonic, then clonic convulsions lasting for a few seconds, and the patient usually being dull for some hours afterward. This is termed *grand mal.* In the fit the patient may bite his tongue, and during and after it the sphincters may be paralyzed. The attack may be ushered in by a more or less long premonition, or by an aura. The latter is a psychic phenomenon immediately preceding the fit. Aphasia, paralysis from hemorrhage into the brain, or death from exhaustion following a series of attacks (*status epilepticus*) may result in rarer instances. Dementia may be a remote consequence. Notable exceptions to this occur.

There is, however, a tendency to progressive deterioration of the nervous system in epileptics; so that all forms of mental, brain and spinal phenomena may be expected. The above are about all of what are considered the cardinal features of this malady.

The recognized *stages of an attack* are (1) spasm of vessels (palor), (2) relaxation of vessels (convulsion—tonic, then clonic), and (3) recovery.

The authors have made an analysis of 315 cases of epilepsy, with the hope that such a study may be of some fruition in the better understanding of the disease, and more remotely toward the treatment which is at the present day so futile in the majority of cases.

We have tabulated 304 cases from the Infirmary for Nervous Diseases, reporting since 1889; 7 cases from the Nervous Clinic at The Howard Hospital, through the courtesy of Dr. J. Madison Taylor, and 4 cases of unusual interest occurring in private practice. To this analysis several cases will be added that do not appear in the tables.

TABLE 1.

(A.) DEFINITE AURAS RECORDED IN 315 CASES OF EPILEPSY.

Abdomen	4
Aphasia	16
Anger—(sudden outburst)	1
Blood to head (sense of)	3
Contraction—Both hands	2
" Right hand	1
" General	1
Chewing smoke (sense of)	1
Coldness—General	2
" Extremities	3
Fingers and teeth enlarged (sense of)	1
Globus	13
Dizziness, or vertigo	10
Dreams	1
Delusions—Struck on head	1
" Turning into skeleton	1
Or hallucinations—Visions	3
" Smell	3
" Hearing	8
Fear (morbid)	6

* Read before the Medical Society of Pennsylvania, at Pittsburg, May 19, 1897.

Faint feeling and palpitation	9
Nervous or restless	7
Paraesthesia—Extremities	4
Sensation of—Trembling	5
" Twitching	4
Stomach—Nausea, or distress (definitely)	22
Vague premonition	12
	144

Total auras was 144, or in about 46 per cent. of the 315 cases.

The most frequent aura was stomachic (in 15 per cent. of auras noted); the next frequent was aphasia; next, "vague sensations."

(B.) Initial Sensations or Movements Exactly Determined, of Short or Long Duration—*i. e.*, Premonitions.

Breathing (spasmodic)	1
Calls (aloud)	5
Clothing (pulls at) 1 hour before attack	1
Dull or vague sensation, day or more	10
Eyes twitch	1
Eyes (rubs)	1
Excitement (preparoxysmal)	1
Hiccough	1
Head (turning to side)	2
Head (pain several hours before attack)	5
Head (feeling of heat in attack)	1
Muscular rigidity (2 days)	2
Moans	1
Moves about incoherently	9
Sensations some hours, pain localized	4
Talks incoherently	4
Throat (catches at)	2
Tongue (bites at) at times can stop attack	1
Vomits	1
	53

Initial sensations in 53, or in about 17 per cent. of cases.

In the above tables, the *aura* is used in its legitimate sense of a sensation immediately, or within a few seconds, preceding a seizure, and yet not a part of the epileptic fit. It is frequently most difficult to differentiate between *an aura and an initial increment*, or part of the attack itself. The value of such definite knowledge is desirable in a given case, when it is known that a fit may, at times, be stayed after the aura occurs, by the patient or other person. Thus, in one case tying a binder firmly around an arm would stay an attack. In one case, too, the initial movement of biting the tongue frequently awakened the man, who, at times, could mentally inhibit the attack.

This man, aet. 50, is an *exceptional case of essential epilepsy*, which began by attacks of "absent-mindedness," at 33 years of age, and which he affirms, after a trauma upon the parietal region, developed into *petit mal*, of which 5 to 21 have occurred daily for the past 18 years. During this time he has only had 8 major attacks, and these have all occurred while asleep, between 3 and 4 o'clock A. M. He used to have intermittent bleeding piles. The man has a remarkable memory, is very intelligent, and insists that when bleeding from the piles the attacks were much less frequent. Was it due to unloading turgescent blood-vessels? "Catching cold" in the bowels, or indigestion from food, have always been precursors of the major attacks—*a post hoc, ergo propter hoc.* An aura in this case, which is inconstant, is of the singular delusion that the last thing he has done, "God will punish him for." As to treatment, the late Dr. J. Hayes Agnew had advised cutting down upon the skull, but no fracture being found, the bone was not trephined. It should be said there were no focal symptoms. The operation did not help him. Recently, under the care of Dr. H. C. Wood and Dr. Grayson, he has had a chronic nasal disease treated, with some benefit to the attacks, again relapsing.

After we had treated him without avail for some months, lavage was instituted. This has afforded some relief to gastric distress, but has had no material effect upon the attacks. The man is in excellent physical and mental health otherwise

Dr. S. Weir Mitchell saw the man with us, and confirmed the moderate continuous use of trional. (He has taken large doses of bromides for years, with little benefit.)

We have advised the man getting back to work, as a skilled mechanic, as an aid toward inhibition. The fact that his *grand mal* has only occurred at night, makes this advice the more tenable. A letter, under date of May 3d, 1897, says: "Dear Sir—I am located as above, and busily engaged at my legitimate following. I am having one or more *minor* attacks every night, but little sign of a *major* one. I awoke once or twice since coming here, and caught myself in the act of biting my tongue. I am using the tube and washing out my stomach once a week, and taking the trional regularly. I am very anxious concerning the major attacks, fearing their return. I *do* wish some definite remedy could be found. With kind regards, I remain, yours very truly, J. H. T."

The letter is quoted in full to show the very good mental condition of the patient. There is no neurotic heredity in this man's family. We have no doubt that overstrain of mind

while in charge of a large woolen mill was the inciting cause of this case of idiopathic epilepsy. The man made his very excellent memory the storehouse for everything. Would a note-book have been a preventive?

That attacks of indigestion add to the seizures we cannot doubt. We propose getting rid of this source of reflex disturbance, in the hope that the seizures will be stayed. What will cure him? (Dec. 7, 1897—reports less attacks; general gain.)

We are indebted to Dr. S. Weir Mitchell for the suggestion of a more thorough study of auras in epilepsy, but unfortunately the records are not in detail in many of the cases, so that we shall continue *this* research.

Cases of Other Peculiar Auras.

In one case, a *peculiar odor of flowers* ushered in the fit. Another had an *odor of some indescribable substance*, which was associated with a sweet taste in the mouth. In a third, the case of a German boy 16 years of age, a *picture* of a landscape always appeared, gradually becoming smaller until the fit was on.

Case af Epilepsy, with Ophthalmic Aura—Vision of a hideous face.—Mrs. A., aged 40, has three children, and has had three miscarriages. There is no neurotic family history, and she has never been subject to headaches. From the age of 9 or 10 years she has had attacks, in which everything seems far off, or, as she expresses it, "like looking through the large end of an opera glass." There always appeared in these attacks a face with unpleasant expression, which was very distinct for a time, but gradually faded away. She was not unconscious during the attack, but felt powerless to move or exert herself, and would call to any one in the room to shake her, so that she might regain self-control.

These attacks continued, with greater or less frequency, until November, 1889, when she had an attack of epilepsy (*grand mal*) in her sleep Again, in April, she had another attack while driving in her carriage. These are the only attacks of grand mal which she knows of having had, and both were preceded by the vision of the unpleasant face.

Table 2.

Exciting Causes.

Causes Assigned as Definite in 315 Cases.

Alcohol	5
Anger	1
*Adherent prepuce, or phimosis	3
†Bowels—Diarrhœa or dysentery	4
" Constipation	2
" Worms	3
Convulsions of childhood (dentition)	15
Dissipation	2
Diphtheria	1
Disorders of menstruation	6
Fever—Simple	1
" Typhoid	2
Fright	15
Grief or worry	7
Insomnia	2
Influenza	1
Indigestion	10
Lightning stroke	1
Masturbation—Male	3
" Female	1
Measles	1
Meningitis	2
Miscarriage	1
Overwork	5
Pertusis	1
Pregnancy	3
Scarlatina	1
Sea-bathing	1
Stone in ear	1
‡Sexual intercourse	1
Sore throat irritation	1
Sun heat	2
Tonsils enlarged	2
Tobacco—Smoking	3
" Chewing	2
Trauma—Head	19
" Arm or foot	2
" Miscellaneous	10
Vaccination	1
Total 144, or in 46 per cent.	144

It will be seen that *grief or worry* are the assigned causes in *seven;* that *convulsions in childhood* come high in the list, with *fifteen* cases, as does *fright* with an equal number; that *indigestion* is given as a cause in *ten* cases, and that *disorders of menstruation* are given in *six*, while *trauma of the head* has the greatest number of recorded causes, nineteen; but the latter must be slightly regarded, as we know in all cases of essential epilepsy that injury, or other supposed causes, are only the excitation of a predisposition.

Convulsions in childhood are, in the major-

* We have confirmed the reputed cause for night-terrors, being preputial irritation and enlargement of tonsils, in a number of instances outside of this analysis. Night-terrors being in large part curable when the existent gastro-intestinal irritation is also relieved, we exclude it from the category of epilepsy on that basis alone, admitting, however, that it is evidence of reflex irritation of the central nervous system, which may, when uncorrected, pass into true epilepsy.

† Besides being a cause of the original attack, both diarrhœa and constipation may excite individual attacks, as does gastritis.

‡ Case reported.

ity of cases, *bona fide* primal causes. In the lesser number the neuron irritability is, no doubt, congenital, and dentition fires the ammunition. Such eclampsiæ in children, the result of teething, are more prone to leave a lasting epilepsy than the puerperal eclampsiæ in women, for example. This must be due to the greater instability of the not fully evolutionized neuron of the infant as compared with that of adolescence. We do not know of a case of puerperal convulsions that recovered, having epilepsy as a sequel. Specific disease is not so frequent a cause as is assumed. In a private case of an adult male,* however, we note a prolonged drunk and resultant alcoholic fit causing true epilepsy, the attacks recurring at irregular intervals, mostly at night, and increased in force and frequency when he is drinking.

TABLE 3.

A, b, c, d, e, f, g, h (315 cases), b', b'', i, j.

(a) Heart.

Excitable	3
Feeble heart	3
Feeble pulse (especially)	4
Feeble and prolonged	3
Overacting	2
Murmurs—Systolic apex	15
" Basic	4
Rapid	3
Venous hum	3
Valvular sounds	1
	41

(b) Blood.

Average of	H—75 per cent. r. b. c.—5,068,780. w. b. c.—7,020.
(b') Pale-looking all the time	52
(b'') Palor alone as an attack	1

(c) Sex.

Males	134
Females	181
Total	315

(d)

Consciousness in attack—*i. e.*, convulsions only	7

(e)

Unconsciousness (profound), without convulsive movements	20

(f)

Dazed only and pale in attack—*i. e.*, convulsions, with partial consciousness	2

(g)

Flushes in attack	10
Blue in attacks	5

(h) Eyes.

Astigmatism and Hypermetropia	7
Contracted fields	1
Disc—Too red	3
" Choked (brain tumor case)	1
Eccentric pupils	1
Fundi hazy	5
Pupils constantly dilated	4
Sluggish pupils	13
Es, or exophoria	6

(i)

Sleeping spells, alone (Narcolepsy)	2

(j) Chest and Lungs.

Pigeon breast	3
Flat chest	6

(No tuberculosis of lungs noted in any case.)

The above series of tables shows *the heart to have been effected* in 41 cases, or $13\frac{1}{63}$ per cent.

In the total number (315), 52 were *pale-looking.*

The *average blood count* shows, if any, a chlorotic type of anemia when existent.

Proportion of males to females about 1 to $1\frac{1}{3}$.

Eye lesions bear no weight in the vast majority of cases. This view is upheld by de Schweinitz. When occurring, this reflex source of irritation should be corrected.

(a) It is surprising the few cases in which even enfeeblement of cardiac action is recorded in the 315 cases. The systolic murmur heard at the apex in 15 cases, is a very small number indeed, and can be wholly attributed to other definite causes.

(b) Anemia is an inconstant condition in epilepsy.

(b') *Seventeen* per cent. of the cases *appeared* pale. The question of a probable quantative anemia, it would seem, cannot be settled.

(b'') The one case of sudden palor *alone* must be extremely rare. It, perhaps, presents the first stage of the attack only—*i. e.*, spasms of the peripheral vessels. How soon this case will become a frank epilepsy, will be interesting to watch, should not a happy cure follow treatment.

(c) Pelvic and menstrual disorders may count for the slightly greater number of epileptics in females, of the total 315.

* We neglected to mention that this man also has the premonition of an attack through a "dream" that he is praying; and in the dream thinks himself "confused in his mind." He then awakens, about 5 A. M., is conscious of his surroundings, and the convulsion is immediately upon him. The "dream" is always intense when an attack follows. Less definite dreamy states sometimes occur, and then an attack is not so apt to follow. In any event, "wind dyspepsia" has been a supposed exciting cause.

(d) The occurrence of consciousness with convulsions of a definite nature, and for long year's duration, cannot exclude the case from the category of epilepsy.

(e) It is equally uncommon to note prolonged unconscious attacks without convulsion. Of course, all these cases are to be diagnosed carefully from hysteria, hystero-epilepsy and stages of hypnotism.

(f) The convulsion with partial unconsciousness is also infrequent.

(g) The primary flushing, or cyanosis, are exceptions to the rule.

(i) The recently described *narcolepsy* is a good title for sleeping spells, which occurred in two cases.

Stigmata of degeneration is evident in hereditary epilepsy, and less in acquired epilepsy They consist of asymmetry of head, ears, etc. Lapses of memory and slow conception are the most marked mental states in the epileptic interval.

TABLE 4—(315 CASES).

(a) Intelligence.

61 per cent.—Fair (assumed when not in notes so stated)	192
19 per cent.—Bright	62
17 per cent.—Poor	50
3 per cent.—Imbecile	11
Total	315

(b.)

Aphasia, after attacks and when fully awake	3
Brain tumor	1
Stupid, very, after attacks, for hours	13
Scars—Face	15
" Extremities	26
Spastic paralysis is co-existent	9
Trephined—Result. benefit	3
" " No benefit	4

(c)

Disposition, changed to bad (depends upon stage)	26
Memory—Very good	1
" Medium	12
" Poor, or bad	34
Precocious	10
Imbecile and epileptic	11
(About 25 per cent. of imbeciles have epilepsy.)	
Abnormal appetite	3
Epileptic facies	100
Headaches after severe attacks	20
Nutrition—Good	50
" Bad	76

Nutrition otherwise fair; also, color good.

(d) *Uncommon sequels* of attacks of epilepsy in 315 cases.

Delusion of turning into a skeleton	1
" His brother having struck him	2
" God going to punish him for last act done preceding attack, ever so simple	1
Delusion of snake at his throat	1
Dreams much after, for few nights	2
Post epileptic mania, with visual hallucinations	1

(e)

Cases bled in status epilepticus	1

Result good.

(f)

Cases bled *after* severe attacks	1

Blood, *hyper*-toxic; urine, *hypo*-toxic.

In the two latter cases, the blood was very dark and hyper-toxic. In a number of cases, the *urine* was hypo-toxic.

In only six cases was intelligence, disposition and memory well balanced.

(a and b) Our cases are presumably of the average severity, since they have, in the majority of instances, been brought to the clinic many times. Therefore we are not dealing with the severe types in the main, as are seen in hospitals for the epileptic. 192 cases, or 61 per cent., are recorded as of fair intelligence, 19 per cent. as bright, 17 per cent. as of poor intelligence, and only 3 per cent. as imbecile. The latter were of cases beginning at birth in imbecile children, about 25 per cent. of whom have epilepsy complicating.

Aphasia following complete recovery of mentality occurred in only *three* cases, while *prolonged stupidity* was ascertained in only *thirteen*.

Scars, the result of injury during attack, were recorded in 41 cases. The above references in these cases point out the conservatism of nature in restoring function, which is almost unthinkable; and confirms the opinion we hold, that irritability of the coördinating centres alone is the predisposing cause of the vast proportion of epilepsies.

Spastic paralysis (cerebro spinal palsy of childhood) existed as the organic cause of epilepsy in 9 cases. One of them was due to brain tumor.* A number were microcephalic imbeciles.

(c) Disposition was changed or notably bad in 26 cases. The memory was extremely good in one (detailed above), and was bad in 34. Memory is usually disproportionately lost as compared with intelligence. Are certain neurons (those of perception) made more sluggish than others (those of conception)?

There were notable *perversions of appetite* in *three* cases; about *one-third* of the cases presented that dejected, bromide-eruption-covered face, known as *facies epilepticus*. In *six* cases, of at least a half a dozen years' duration, known to the authors, such stigmata in the face was

* See Dr. Sinkler's reference of case, Tumor in Silent Region, etc., *Journal of Nervous and Mental Diseases*, December, 1896.

entirely wanting; in one of them, a girl of 18, with frequent attacks, her mental and physical health were excellent.

These cases are rare, and force the conclusion that *epilepsy, chorea and other psychoses are often only inherent irritability of the central nervous system*, and that bacteria, or other circulating poisons, are the rarer causes of this irritability—*ergo*, that the true treatment must be in advising proper control of the nervous system down the generations, so that the progeny may assume a normal development. Systematic treatment will be referred to later.

Nutrition of body was recorded good in 50, and bad in 76 cases. The remaining 189 presented average physiques.

(d) *Dreams* which we know are sleep-produc d, and which occur at times before and after attacks, during sleep, supports our view that not only is the lowered power of inhibition of the *general* nervous system a cause of more frequent severe attacks during dark hours, as pointed out by Langdon and Witmer, but that the fact of sleep itself being the *main* element of this lessened inhibition, is proven when it is known that more severe attacks occur while sleeping. One case had a day attack, only while sleeping. Waking epileptics at the hour of sleep of an expected attack, may prove of value in prophylaxis of the spell.

(The cases bled were for Dr. S. Weir Mitchell, who, with Dr. Stewart, of the Hygienic Laboratory, U. of Pa., is making an extended research in this direction.)

TABLE 5.

(A) NUMBER OF ATTACKS.

No. with *Daily* Attacks.

Petit Mal.	*Grand Mal.*
41—As follows in	20—Seldom more than two daily.

No. Attacks.	*Cases.*
1 to 4	4
1 to 5	2
2	4
3	7
4	7
4 to 5	2
6	1
7	1
8	1
10	4
10 to 20	1
18 to 20	1
6 to 12	1
15	1
16	1
20	1
25	1
30	1
Total cases	41

No. with *Weekly* Attacks.

Petit Mal.	*Grand Mal.*
2.	44.

No. with *Monthly* Attacks.

Petit Mal.	*Grand Mal.*
2.	22, or in $16\frac{7}{17}$ per cent. of female cases.

No. with *Yearly* Attacks.

Petit Mal.	*Grand Mal.*
0.	3.

(B) *Heredity Traced.*

Insanity	26
Epilepsy	50
Other neuroses	75

(C) *Complicating Chorea.*

Minor	5

(D) *Sphincters relaxed.*

After or in attack bladder	199
" " " Bowel	27

(E) *Patients* having conditions which excite attacks (stated by relatives)	121
(F) Paresis after attack	7

(A) *Forty-one* had daily attacks of *petit mal*, and ranging from one to seven as an average. (One case as high as twenty on some days.)

Twenty cases had daily attacks of *grand mal*, and seldom more than one. Two had weekly attacks of *petit mal*. Forty-four had weekly attacks of *grand mal*. Two had monthly attacks of *petit mal*. Twenty-two, or $16\frac{7}{17}$ per cent. of the female cases, had monthly attacks of *grand mal*, related and unrelated to the menstrual epoch in equal proportion. (Seven cases were influenced by pregnancy.)* Three cases had one attack a year.

(B) *Heredity* was traced in 47 per cent. of the 315 cases.

(C) Five cases had *chorea minor*, complicating at some stage of the disease. The wonder is, that it is not more frequent; that other periodic neurosis (migraine) was not noted in any of the cases.

(D) *The sphincters* were relaxed after an attack in 71 per cent.

(E) In 38 per cent. were causes of exciting attacks given.

This seems to be a modest summary, in our experience with epilepsy.

(F) *Paresis* was not frequent after attacks in seven cases.

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*See "Protean Influence of Pregnancy on Idiopathic Epilepsy," in "*Translations Philadelphia County Medical Society,*" 1896.

TABLE 6.

MOST FREQUENT TIME OF DAY OF ATTACKS (WHERE ACCURATELY RECORDED).

(1) A. M — After 3.

Petit Mal..... 72 *Grand Mal*... 18
In 2 always at 3 A. M.

(2) Noon—Always.

Petit Mal..... ..... 0 *Grand Mal* 2

(3) Meal-time.

Petit Mal .... 27 *Grand Mal.* 3
And always at meal.

(4) Night—6 to 3.

Petit Mal .... 0 *Grand Mal.*..... 7

In four cases attacks never occurred in daytime.

The loss of mental inhibition at night when asleep probably accounts for the major attacks occurring at night most frequently.

In twenty-eight cases only did diurnal and nocturnal attacks occur equally distributed throughout the 24 hours.

The probable reason for so few attacks of *petit mal* being recorded at night is, that the patient is seldom awakened by them.

From 6 P. M. to 3 A. M., *grand mal* attacks were most frequent; next frequent after 3 A. M. until waking hours, and least frequent in day-time orat meal time, when a fairly large number of *petit mal* attacks are recorded, although the largest number of *petit mal* cases (72) are accurately recorded as occurring after 3 in the morning.

Details as to time of attack in relation to just before and after going to sleep or awakening, will be reserved for future investigation.

TABLE 7.

[A]

Remissions long in the 315 cases.

1 a year...1 case. One attack in 4 years...4 cases.
3 " ...3 " " " 2 " ...1 "
4 " ...3 "

[B]

Cases recorded as having had few attacks over periods of several years.

One case for each number of attacks per year, viz.: 2, 3, 4, 5, 6, 4, 5, 8, 9, 10—all but 2 at night.

[C]

Died in Status Epilepticus.. 2

Age 23—Male, hospital case.
Age 65—Female, private case.

[D]

Cases having initial cry... .....53, or 16⅔ per cent.
" " Tongue-biting...68, or 21 "
" " Initial cry, occasionally, only... 17
" " Tongue-biting, " "... 16
" never " " 2

There must be many more of the latter, if specifically studied.

[E]

Age at beginning of attack in 315 cases.

Years—	1,	2,	3,	4,	5,	6,	7,	8,	9,	10,	11,	12,
Cases —	16,	19,	16,	13,	7,	15,	10,	10,	7,	14,	9,	8,
Years—	13.	14,	15,	16,	17,	18,	19,	20,	21,	22,	23,	
Cases —	9,	14,	9,	9,	9,	14,	5,	4,	3,	5,	8,	
Years—	24,	25,	26,	27,	28,	29,	30,	31,	32,	33,	34,	
Cases —	5,	2,	5,	3,	3,	8,	1,	0,	2,	1,	1,	
Years—	35,	36,	37,	38,	39,	40,	41,	42,	43,	44,	45,	
Cases —	1,	0,	1,	0,	0,	1,	1,	0,	1,	0,	0,	
Years—	46,	47,	48,	49,	50,	51,	52,	53,	54,	55,	56,	
Cases —	0,	1,	0,	0,	0,	2,	0,	0,	0,	0,	0,	
Years—	57,	58,	59,	60.								
Cases —	0,	0,	0,	0.								
In Months—	1,	2,	3,	4,	5,	6,	7,	8,	9,	10,	11,	12.
Cases.	1,	1,	2,	0,	0,	4,	2,	5,	2,	7,	4,	2.

Weeks duration in 315 cases.

1st week, or Congenital.	*2nd Week.*	*3rd Week.*	*4th Week*
10	2	0	2

[F]

Duration of attacks at time of reporting,

Less than one year (12 were of indefinite time).

Years—	1,	2,	3,	4,	5,	6,	7,	8,	9,	10,	11,
Cases —	30,	21,	30,	26,	24,	23,	19,	11,	9,	9,	7,
Years—	12,	13,	14,	15,	16,	17,	18,	19,	20,	21,	22,
Cases —	8,	11,	4,	5,	5,	2,	7,	3,	2,	2,	1,
Years—	23,	24,	26,	28,	29,	31,	33,	35,	42,	63.	
Cases —	2,	2,	1,	1,	1,	2,	1,	3,	2,	1.	

Months—	1,	3,	6,	9.	Not known,	Total,
Cases—	1,	1,	4,	6.	28	315

(A) One case presented only two fits a year; three cases had an equal number of attacks a year; three had, on an average, four attacks a year; four cases presented only one attack in four years; and one case had only one attack in two years.

Some Private Cases of Epilepsy, with Long Remissions.

Case 1—12 *years' interval.*—Mrs. L., aged 60, has one child, 22 years of age. With the exception of attacks of migraine, she had good health until her marriage, at the age of 29. Two weeks after her marriage, she had a pro-

nounced epileptic attack. This occurred while she was asleep in a reclining chair in a car. From this time until the age of 35 she had frequent seizures, all of which occurred during sleep. No attacks occurred between the ages of 35 and 47. The attacks began again in 1889, when the patient was 47 years of age. The menopause had no influence upon the recurrence of the attacks, because this did not take place until she was 51 years of age. She came under my care in 1894. The attacks occurred at intervals of from 6 weeks to 2 months. She was ordered bromide of strontium, and had no attack for 15 months, and during the year following she had but two.

Case 2nd—4 years' interval.—T. H. M., male, aged 29 years, came under my care August, 1890. For nine years he had had attacks of nocturnal epilepsy, and usually in the early morning. He had one attack during the day, when he was asleep. Under carefully regulated doses of bromides, the attacks lessened in severity, and the last attack he had occurred on the night of July 4th, 1892. When last seen—September, 1896—there had been no recurrence of the attacks.

Case 3rd—21 years' interval.—A. W. H., male, aged 42. When 12 years of age, he began to have attacks of epilepsy. Some of the attacks were *petit mal*, but the severe attacks also occurred at frequent intervals. Most of the attacks were nocturnal, but they also occurred in the day. At times he would fall from 3 to 4 times in a day, and at other times there would be intervals of from two to three weeks, when he would become better. In 1871—that is, five years after the beginning of the epilepsy, the attacks ceased. The patient had been taking a preparation of bromide of ammonium with belladonna, and, after taking the preparation for three or four days, there were marked symptoms of belladonna poisoning—dilated pupils, mental excitement and flushing of the skin. There was no return of convulsions from this time—that is, the age of 17—until he was 38 years of age, 3 years after his marriage. The attacks began as "*petit mal*," but after two years he had a general convulsive seizure. The attacks have continued, with greater or less severity, until the present time.

(B) Of the ten cases, cited in the table, who had only a very few attacks, in all but two attacks they occurred at night.

(C) The younger case, a male, aged 23—it was not noted as to particulars of his death.

In the instance of the woman aged 63, who also died in status epilepticus, it had been a developmental case, said to be due to anxiety, and occurring after maturity (and long after the birth of her only child, a feeble woman, who is the mother of the girl mentioned below).

This patient, aet. 63, had become blind some six years before death, but her mind remained fairly good up to the last. The fact that the grand-daughter was recently seen in a neurasthenic and hystero-epileptic state, from prolonged nursing of the grandmother, makes the genesis more clearly perceptible in both, as being a combination of neuropathic diathesis, plus mental strain.

(D) $16\frac{2}{3}$ per cent. are recorded as having constantly the initial cry; 21+ per cent. are cases of tongue-biting in the spell.

An occasional cry was recorded in 17 cases. An occasional tongue-biting was recorded in 16 cases. In two cases it was specifically stated that tongue-biting never had occurred.

(E) Shows *ten* congenital cases—*sixteen* beginning during first year of life; 19 during the second year; 10 during the third year; 15 during the sixth year; 14 each during the tenth and fourteenth and eighteenth years.

(F) The longest duration of epilepsy was 63 years—one case; the next longest was 42 years—2 cases; 35 years—3 cases; 33 years—1 case; the least duration is 1 year—30 cases, and 3 years—30 cases.

Diagnosis of epilepsy must be made from the transient eclampsiæ. If the attacks soon cease, and there is evident cause, we may exclude epilepsy.

From hysteria.—The great preponderance of hysteria in females, the persistence of partial consciousness in spite of denial by the patient, and the irregular nature of the clonic spasm, are points.

From hystero-epilepsy it is not to be positively differentiated, if we admit this disease to be a combination of hysteria and epilepsy. Hysteria is a frequent accompaniment of epilepsy, and in hysterical patients the true epileptic attack may readily be overlooked.

Cataleptic states are told by the history of the case. The effects of pressure on hystogenic zones, so called, may aid diagnosis.

It is folly to claim ability to make a positive diagnosis on the spur of the moment in the majority of cases.

Chemical analyses of the excretions and secretions, and of the blood changes, are to be noted and placed in their proper standing, as diagnostic marks, in obscure cases. Confusion sometimes exists as to apoplectic convulsion, or to uræmic convulsion and epilepsy. The history, and the conjugate eye deviation and paralysis in the *first*, and duration of fit and

urine examination in Bright's disease would clear up such possible error in the *second.*

PROGNOSIS as to cure is bad, in the large majority of epileptics. Organic brain cases are, of course, from the first unpromising. Where evident lesions of *any* sort are found in a given case of essential epilepsy, this should be corrected, as *getting rid of a reflex excitation*, and timely benefit has been had by such treatment. Indeed, cures have been effected, as in one case of circumcision under our care. Prompt action should be resorted to in these cases, if recovery is ever to be hoped for.

After the convulsive state is once profoundly established, it seems futile for us to hope for more than decided amelioration.

A large number of epileptics, to our surprise, live many years in average health.

PATHOLOGY of organic epilepsy depends entirely on the organic brain disease (tumor, fracture of the skull, meningitis).

Essential cases of moderate severity will show no pathological change of the nervous system. Later, they are also apt to develop overgrowth of blood-vessels of the brain, and then follows fatty degeneration of the cerebral neurons, dilatation of the peri-vascular lymph spaces, and overgrowth of the neuroglia tissue. These are in co relation with the changes as found in the fundus of the eye in advanced cases of idiopathic epilepsy, as pointed out by Oliver.

Lloyd Andriezen recently speaks of the "Pathogenesis of Epileptic Idiocy" as being a loss of contour, and a microgyri with localized sclerosis, as compared with non-epileptic idiots where the aforesaid changes are not found.

TREATMENT.—As pointed out above, the condition must be battled with along the lines of heredity. The history of this disorder being in a family should *interdict marriage.* The history of *insanity* should do likewise. This hope may be only partially realized, we admit. Hygienic care of the patient should be enjoined.

Attention to reflex disturbances in any of the special senses should be well worked out and corrected.

Especially should *diet, and idiosyncrasies* of the patient as to food be guarded. Indigestion is, no doubt, an exciting cause of epilepsy, and of attacks. Gastro-intestinal therapeutics is of great value. The use of salol and potassium permanganate come in place here. Lavage has an important place in the therapeutics of epilepsy, as pointed out by Herter and Rachford. *Intestinal antiseptics*, as potassium permanganate and salol, do especial good in those cases which have fermentative dyspepsias. *Amyl nitrite* inhalations may abort an attack when an aura warns. *Bromides* are the standard remedies to stay the spells, and should be given sparingly. Many cases have the disease "*bromism*" engrafted upon the epilepsy by want of care of the physician. The great value of *digitalis* in connection with bromides or acetanilid is found in those cases with flagging circulation.

Digestants will often aid in lessening attacks, as much as any cerebral depressant. Indeed, *strychnia* may be indicated where atony of the general system obtains.

Other drugs that have been of service as substitutes for the bromide treatment, are *trional, solanum-carolinense, passiflora-incarnata, sulfonal*, etc.; and, finally, Flechsig's *opium treatment* may be good in exceptional instances.

Hypnotism deserves mention as a possible means of relief of epilepsy, but has not, as yet, been used enough to more than be a trial. Like all new impressions upon an individual case, it may do good, temporarily at least. In view of the recently advanced theory of motility of the neuron—and assuming this to be the cause of essential epileptic convulsions—hypnotism is worth a wide investigation.

Specific treatment should be judiciously employed where syphilitic origin is suspected; but this should not be persisted in to disorder of the gastro-intestinal tract, and other functions.

Trephining will be indicated in fracture and superficial neoplasms. Post-epileptic manias should be watched for so as to guard against homicide. Commitment to an asylum may be a *dernier resort.*

After all our care in treating this disease, it will be found that, *to our surprise, a small percentage are cured*, and a very *large amount of amelioration* of the severity and frequency of attacks is accomplished.

So, we see that the treatment of epilepsy, while one of the *opprobria* of medicine, has a promise for even better results in the future.

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SYNOPTICAL REPORT OF FOURTEEN ABDOMINAL OPERATIONS FOR DISEASES OF UTERUS, OVARIES, ETC.*

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I present a report of fourteen abdominal cases occurring in women, operated on at Mother's Home, Stuart, Va. The result in each case has been highly gratifying to myself.

Case I.—Mrs. S., age 33; nine children. Most distressing symptom was pain in the right iliac region, confining her to bed most of the time for the last two months. Examination revealed bilateral laceration of cervix; backward displacement of uterus, with perineal rupture. Uterus curetted; cervix and perineum repaired. Six months after that patient returned, still complaining of pain in right side, some elevation of temperature, and an exudate to the right of the uterus. Patient put to bed. Absolute rest, ice bag, etc., prescribed. Symptoms did not improve; but the development of chills, followed by profuse perspiration, caused me to open the abdominal cavity and remove the pus tube, which brought about a rapid recovery of my patient, and her health since has been all that could be desired.

Case II.—Miss E., age 34. Five years ago noticed a swelling in the left iliac region, which continued to grow. She had the appearance of being larger than a woman at full term of gestation. Diagnosis, ovarian cyst. Operation advised. After some preparatory treatment, the abdominal cavity was opened in the usual way. A large cyst was found growing from the left side; a smaller one from the right. The large cyst was adherent to intestine, omentum, side of pelvis and broad ligaments, and so firm were the adhesions that separation was impossible. The fluid, which measured three and a half gallons, molasses-colored, was withdrawn. The sac, after being separated from as many of the adhesions as possible, was cut off, and the remaining part was stitched into the abdominal opening, curetted and packed with gauze. The cyst on the right side was removed with much difficulty, owing to the adhesions to side of pelvis. It contained half a gallon of fluid. The hæmorrhage, caused by separating the adhesions, required the cavity to be packed with iodoform gauze. Both ovaries and tubes were removed. The patient was removed from the operating table in a state of profound shock. Pulse, 150. Means to bring about reaction were resorted to, and the patient made a slow but good recovery, and has since remained in good health.

Case III.—Mrs. C., age 30; one child four years old. Suffers great pain for several days before the flow. Constant pain in both ovaries during the menses. The most distressing symptom was daily accumulation of gas in her bowels—to such an extent as to render her life miserable, and kept her confined to her room. All other treatment failing to give relief, the ovaries were removed. They were found cystic and enlarged. The patient made a good recovery, and has since been in perfect health.

Case IV.—Mrs. McC., age 36; one child six and a half years old. A typical case of ovarian dysmenorrhœa. Pain constant in region of both ovaries. In bed two weeks out of four—requiring large doses of morphia for relief from pain. Ovaries prolapsed and adherent; general health greatly impaired. She was under treatment for fourteen months before operation for removal of ovaries was performed. All means known to the physician in charge were resorted to with no relief. Since the operation—now about three and one-half years ago—her health has been perfect.

Case V.—Mrs. P.; three children. Cystic ovaries prolapsed. In bed most of her time. Constant pain and not able to look after her household duties. Had been under treatment by her husband—a very prominent physician—for several years, but with no relief. Operation November 21, 1894. Ovaries, enlarged and cystic, were removed. Patient made good recovery.

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* This article was accepted for the December 10th issue. and reprints were made accordingly. But in making up the "forms" for the journal, this article was accidentally omitted from its proper place. We exceedingly regret the oversight, and make any ample apology The article, however, loses none of its merit by reason of the oversight referred to; so that we take great pleasure in thus calling attention to this paper.—Editor.

Case VI.—Mrs. W., aged 20; no children. Complaining of general pelvic pains, etc., for five years, and in bed for most of the time. Abdomen opened in the usual way. Cyst in left ovary as large as a turkey egg. Several small ones in right. Both ovaries removed. Health since has been good, except at times extreme nervousness, due, I think, to artificial menopause.

Case VII.—Mrs. M., age, 39; no children; one miscarriage. About one year ago, discovered a growth in the left side the size of a man's fist. Operation advised. When abdomen was opened, three subperitoneal fibroid tumors were found attached to the uterus by a pedicle. The pedicle was subjected to a V-shaped incision and the tumors removed. Sides of incision united by silk sutures. In one, complete control of the bleeding required packing with iodoform gauze. She made a good recovery, and as yet no sign of any more fibroids.

Case VIII.—Mrs. B, aged 47; five children. Complaining for twenty years of hæmorrhages from uterus, lasting for weeks. Twelve months ago, noticed enlargement in left side. Six months later, noticed one in the right. Diagnosis, ovarian cyst. Operation performed May 28, 1896. Both cysts and ovaries removed. There were considerable adhesions, and cauliflower excrescences from both ovaries were spread out over cyst. Patient made a good recovery, and has since remained in perfect health.

Case IX.—Mrs. W., age 27. No children; one miscarriage. Diagnosis, retroversion with adhesions and endometritis. Suffers greatly from melancholia. Curetted for relief of endometritis. December 16th, 1896, abdomen opened and adhesion broken up with fingers, and abdominal fixation of uterus performed. She made a good recovery, and her mental condition since then has greatly improved, until now she is about well.

Case X.—Mrs. A., age 28. Three children. Diagnosis, ovarian cyst. Operation performed January 5th, 1897. Cyst of left ovary, large as a cocoanut, removed with ovary. Adhesions very firm. Small cyst in right one opened, curetted, and carbolic acid applied and ovary returned. Case made good recovery, and has since been in good health.

Case XI.—Mrs. S., age 38 Five children; one miscarriage. Been complaining for five years of constant pain. Confined to bed most of the time. Rectal and vesical irritation. Uterus surrounded with a mass of inflammatory exudate; immovable; uterus curetted. Abdominal cavity opened and adhesions broken up with great difficulty. Ovaries, being cystic, were removed. Uterus retroverted and adherent; adhesion broken up. Cavity packed with iodoform gauze to stop the free oozing of blood. Patient made a good recovery.

Case XII.—Mrs. L., age 42. One child 18 years old. Been complaining for twenty years. Vesical tenesmus; passes urine every hour. Pain in back and side. General health bad. Nervous system shattered. Diagnosis, retroversion of uterus and cystic ovaries. Operation performed April 14th, 1897. Numerous small cysts in both ovaries, varying in size from that of a pea to three times that size. Ovaries removed, and abdominal fixation of uterus. Patient made a good recovery, and her health has since been good.

Case XIII.—Mrs. C. (colored), age 35. No children; no miscarriages. About two years ago, discovered a growth in right side, which, during last five months, has grown rapidly. Diagnosis, subperitoneal fibroid. July 18th, 1897, operation performed. Abdomen opened in usual way. A mass of fibroids—six in all—found growing from the uterus. Hysterectomy performed. The extra peritoneal method of treating the stump was adopted. Patient made a good recovery.

Case XIV.—Mrs. K., age 33. No children. Subperitoneal and interstitial fibroids of uterus. Stump treated by extra peritoneal methods. Patient made a good recovery. Operation performed September 22d, 1897.

FACIAL MANIFESTATIONS OF DISEASES.*

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The object of this paper is to draw closer attention to some local and general diseases, which are so clearly manifested in the face, that a reasonable diagnosis may be made by a more thorough observation.

That physicians do not obtain the full measure of usefulness from symptoms presented by the face, will be quite generally conceded. Perhaps they fall in error by "slighting what's near through aiming at what's far." Medicine, in this way, is not unlike other occupations, wherein to accomplish an end, we throw aside the simple and more natural aids and take

* Read at a meeting of the Medical and Surgical Society of the District of Columbia, November 4, 1897. For Discussion, see page 562.

upon ourselves a perplexity of devices, which serve only to make more difficult an otherwise easy task. That many diseases are more clearly defined by examining other symptoms than those presented in the face, the writer does not deny, nor does he presume to affirm that there are no diseases in which, by a sole reliance upon the face for a diagnosis, a wrong opinion would be formed. In considering, therefore, this paper presented, it is not the intention to decry other characteristic manifestations of disease in other parts of the body, but simply to lay stress upon the great impressions and reflections of disease which are patent upon the face.

Dr. George B. Wood, in writing of facial expression, says: "It is occasionally almost our sole dependence in diagnosis." Through it we sometimes recognize the existence of pain, insanity, or even in a general way, pectoral or abdominal diseases, when other signs are either wanting, obscure or not available.

The face is but a mirror in which is reflected all degrees of ill-health from that which amounts only to temporary indisposition and depression up to the gravest cachexiæ. Often the mental tendencies and habits of the patient, his temperament or pathological processes going on in other parts of the body, are seen depicted in the changed expression. There you may find the precursor of a convalescence, or the harbinger of a decay. In peritonitis, croupous pneumonia and severe internal injuries, the expression of anxiety may be manifest, when patient and friends are speaking of improvement.

Many diseases are attended with a characteristic aspect of countenance, which will often be recognized by the experienced, so far, at least, as to suggest the disease to his mind. The pallid face and lips, the anxious look, the restless eye, tell, even before the finger is put upon the pulse, of the loss of blood. The pinched nose, the sunken eyes, ashy-colored countenance, with perhaps beads of sweat upon it, speak of suffering or pronounced sepsis. The pale face of chlorosis, the puffy waxy countenance of Bright's disease, the bloated heavy look of myxedema are not less characteristic than the bronzed hue of Addison's disease, the prominence of the eyeballs of Grave's disease, or the yellow tint of jaundice.

The typical disfigurement of one suffering with naso-pharyngeal adenoids is very marked. There is a seeming prominence and puffiness of the cheeks and nasal bones. which causes the eyes to look heavy and sunken. The constantly open mouth and a certain stupid expression of countenance, are characteristic symptoms of past nasal growths.

It is stated that Dr. John Guiteras judges from his first look at the face of a suspect of yellow fever, whether he has to deal with a genuine case. So reliant has he become of this impression, that he finds in nearly all cases his first hypothesis is but made more positive by a systematic examination.

The color, shape and various movements of the face often yield important indications. Thus a bright-red color signifies one thing; a dark-red, a mahogany-color, a purple, or violet color, another. In the former, the blood is duly arterialized; in the latter, it is unduly carbonaceous and probably detained by some obstruction to its return. Paleness may signify anæmia, syncope, leucocythemia, dropsy, nausea, etc.; and there are different kinds of paleness, having different meanings, as that of acute pleurisy, cancer, etc. The size of the face is often very considerably altered in disease. It is apparently augmented in apoplexy, acute mania, convulsions, especially epilepsy, in obstructive diseases of the heart, particularly those accompanied with dropsy, in pneumonia, in the acute stages of periodic, continued or exanthematous fevers. The size of the face is diminished, the features being shrunk or pinched, in the cold stage of periodic fevers, in exhaustive diarrhœa or dysentery, in phthisis and splenic leukæmia, etc. When exhaustion has become extreme and collapse is threatened, we have the facies Hippocratica: the nose sharp, the eyebrows knitted, eyes hollow and sunken, the ears cold, contracted, and their lobes shrivelled; the skin about the forehead hard, tense, dry, and the face pale or of a greenish livid, or leaden hue.

Full blooded persons disposed to endarterial changes frequently as the result of gout, have, at a little distance, the ruddy appearance of blooming health. Closer inspection, however, shows that the ruddy color is due to a dilated or congested condition of the minute blood vessels. This condition, when associated with high tension in the arteries, is highly suggestive of chronic nephritis. In the aged, or in cirrhosis or obstruction of the hepatic circulation, a capillary congestion of the nose is often noticed.

Inspection is even more important in the case of children than in adults. The pale, pinched, weazened face of some babies, who have snuffles, ulcers at corner of mouth, and look prematurely aged, is characteristic of constitutional syphilis; likewise in the "saddle nose," arising from necrosis or removal of a part of the bony framework of the nose. In rickets, the head is usually large, square in shape, projecting forehead with large non-

bulging fontanelles. In hydrocephalus, the head becomes very much enlarged, is rounded or globular in shape, the fontanelles large, tense and bulging, the eyes prominent, the bones of the face small, the expression vacant. According to Eustace Smith, pain in the head in children is indicated by contraction of the brows; pain in the chest, by sharpness of the nostrils, and in the belly, by a drawing of the upper lip. A healthy infant, when awake and well fed, is always kicking or cooing and moving its arms about, and has a happy expression on its face; whereas if any cerebral trouble is present, it often has an anxious frown, its hands are placed to the side of its head or rubbed over the vertex. Constant screaming is nearly always due to the pain of earache or hunger, for abdominal colic is usually intermittent.

And so we may go on enumerating the features of disease as they appear in the face, not only in the old, but the young. By a glance, we can ascertain whether our patient has changed for the better or worse in our absence. The brightening eye, the fading dusky hue, the closed mouth and moist lips, tell without other signs of the typhoid's progress. The pallor of anæmia and of carcinoma, the blueness of cyanosis, the puffiness of renal disease, the bloated face with tuberous nose of the alcoholic; the dropping, often trembling lid of the hysterical; the staring vacant look of the facial paralytic, with the smoothened out, glazed appearance of the affected side, all tell their tales to the careful observer.

What, asks Fothergill, is this subtle, incommunicable power to read facial indications that some practitioners excel so in prognosis; they can give no explanation beyond you can see it in the face; but what that "it" is they cannot tell. Nevertheless, they can both see it and read its interpretation. Experience leads an easy way to this crafty knowledge, and the older physician has gained this ability by long training to grasp much of the essential details of a case by a mere glance at the face of his patient.

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CONCERNING THE INFERIOR TURBINATE, WITH REFERENCE TO THE TREATMENT OF ITS PUFFY CONDITIONS, ESPECIALLY THE SO-CALLED ANTERIOR TURBINATE HYPERTROPHIES.

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More and more as the study of the nose increases are its two main functions brought forward for the consideration of the rhinologist. One of these functions, that of olfaction, has, fortunately for mankind, been given to a mucous membrane, placed so high in the nasal cavities as in most cases to suggest to the young specialist he would do well to confine his work to the lower portions of the nose. Since the mucous membrane of the oral and lower pharyngeal cavities can assist in the preparation of the inspired air for the lungs, nature has bestowed the other nasal function, that of respiration, more particularly upon the lower and more accessible portions of the nasal cavities.

The importance of the integrity of the respiratory portion of the nasal mucous membrane has been written about no little, and yet this importance, if one may judge from the operative procedures, still in some quarters advised, and all too generally carried out, is underestimated.

That this is so, is probably due to two reasons—the tender years of rhinology, as a distinct branch of the tree of medicine, and the enthusiastic writings to welcome the nasal mucous membrane as a highly sensitized area, especially suitable for the development of all possible "reflexes." This enthusiasm not only caused an over-valuation in the majority of cases of the nasal reflex, but carried many operators with it beyond the limits set to natural possibilities.

The continuous application of the electro-cautery or an acid to the turbinate tissues, whenever they were found swollen, was one of the earlier outcomes of this enthusiasm; and while neither the cautery nor the acid are used as extensively and as indiscriminately as they were a few years ago, they are both used still far too frequently, and, in general, the greatest sufferer is the anterior half of the inferior turbinate, the very part of the respiratory nasal membrane where nature has taken so great pains to guard against the easy production of permanent hypertrophy.

In considering the inferior turbinate mem-

brane, for it is this part of the nasal respiratory organ to which the remarks here written are especially applicable, we must bear in mind that the power to swell, to become "puffy," after irritation, is a function essential to its continued integrity, a function which, when entirely lost, leaves the nose in a sorry condition; a function whose impairment, whether as the result of disease or the design of treatment, is productive of unpleasant results in direct proportion to the degree of impairment. *A high degree of nasal occlusion is better than undue potency of the nasal passages.* Nature's method of dealing with reflex hypertrophies of the turbinates, although this method be a slow one and working through years, produces in the end results far preferable to those rapid and seemingly for the time brilliant effects of the cautery.

Often, the so-called hypertrophies of the turbinates are to be looked upon as signs that the nasal mucous membrane still has life enough to make a defence against its enemy, comparatively seldom as diseased conditions. "Doctor, I wish you would examine my nose; I fear some of those hypertrophies have returned." "I wish it were possible for them to do so," was the thought in the doctor's mind, as he looked at the inferior turbinates, for the cautery has been time and again used to "bind down" the mucous membrane to the turbinate bony tissue, until the nasal passages had been made "permanently open," and every function of this important organ crippled beyond the hope of repairs, while the cause of the trouble is untouched, a septal ridge looked down upon the damage it had worked and wondered at its own escape. One still reads frequently about "hypertrophies of the anterior end of the inferior turbinate bone," and the marked relief that patients have received from their "reduction." It is only on the rarest occasions that either acid or the actual cautery should be applied to the puffy anterior end of the inferior turbinate mucous membrane; indeed, so rare are these occasions, that they may almost be said never to exist.

In considering the causes of swollen turbinates, we must bear in mind that they may be either intra-nasal or extra-nasal. In young children, diseased conditions of the naso-pharyngeal tonsil furnish the most frequent cause of swollen turbinates, and when the naso-pharynx in such cases remains untreated, intra-nasal applications, such as sprays, salves, washes, acids, and cauterizations are all useless, and the last two only harmful.

Between the ages of seventeen and thirty-five, the most common cause of turbinate "hypertrophy" is the septal spur. Irritate the nasal mucous membrane and the turbinate tissues fill, and the mucous discharge increases to repel the intruder. When the cause of the irritation is slight, the excess of mucous flow is sufficient to wash the foreign body to the floor of the nose, whence it is either blown out or finds its way into the throat. Where the foreign body is greater in size or more intense in its irritation, we either blow the nose or sneeze. Where the irritating cause is a constant one, such, for example, as the discharge from diseased adenoids from the nasal accessory sinuses, septal irregularities, etc., neither sneezing nor blowing the nose is sufficient to remove the intruder, and the turbinate bodies put up their fists, so to speak, and keep them up as long as they are able.

To the student training his eye to the proper interpretation of intra-nasal pathological conditions, it is of the highest importance that he should recognize that in the normal nose the surfaces of the turbinate tissues are free; and, moreover, that at every point of them there is free space to allow of a varying amount of swelling. The more fully this important fact is recognized, the more intelligently will the nose be treated, and the less frequently will its turbinate tissues be touched by the destructive agents of rhinological therapeutics.

Deviations of the septum, septal ridges and spurs in their occupation of parts of the normal intra-nasal air-spaces furnish the most frequent causes why the surface of the turbinate tissues, when at rest, are not free; or why, if free, still there does not exist room for their normal surface expansion under circulatory changes. Thus it happens that the location of the spur or ridge on the septum not infrequently has far more to do with the production of the turbinate hypertrophy than has its size. The search for the existence of septal irregularities should not be confined to the areas visible to anterior rhinoscopy, for the posterior examination often gives valuable information.

In this connection it may be mentioned that the mes-ethmo vomerine suture, in its upper and posterior part, may develop, on one side or the other, a small ridge, whose presence is the cause of considerable intra-nasal discomfort. This ridge can, in many cases, be seen best from the post-nasal space; in some cases it is difficult of removal, especially when it extends to the posterior limits of the suture.

Save under one condition, to be mentioned later on, the inferior turbinate tissues, when found swollen in the presence of a septal spur,

should not be "reduced by snare or cautery." Remove the spur, where possible, and the swollen turbinate tissues will, in the due course of time, regulate their blood currents. It frequently happens that a patient says: "First one side of my nose stops up, and then the other." Examination reveals one side "as tight as a drum," the other "wide open." When you next see the patient the picture may be the same, only the conditions of the two sides will be reversed. Under these conditions, to attack the inferior turbinates and attempt to prevent their swelling shows a lack of appreciation of the turbinate functions. To apply the galvano-cautery to these turbinate tissues is no more indicated than it is in the case of the œdematous ankle of Bright's disease, or to the erect penis.

That in these cases the turbinate tissues can and do empty themselves, shows that their function is retained; and their periodically swollen condition but expresses the fact that there is, external to themselves, a persistent cause for their irritation. It is unreasonable to expect that the turbinate tissues, whose vaso-motor control has been for years deranged through the presence of a septal spur, will immediately upon the removal of this spur regain a normal behavior. Thus it comes about that we have often to wait for weeks after the removal of a septal irregularity before the swollen turbinates go down and leave the nasal passages free.

The septum may be straight, showing neither ridge nor spur; the nasal cavity and the adjoining air spaces may be healthy, and yet the turbinates may be swollen to a greater or less degree all the time. Sometimes this is due to the patient's general health, and here the use of the cautery is contra-indicated; sometimes the explanation of this condition is to be sought in the shape of the inferior turbinate itself. The turbinate bony tissue may be abnormally developed, so that its mucous covering may, at one or more points, lie against the septum, or its inferior border may lie against the floor of the nose, or its superior border reach into the vicinity of the middle turbinate.

In such cases, where we have a straight septum, it is manifestly wrong to apply the cautery to the septum or floor of the nose at the point of contact. At first glance, the indication for treatment would seem to be the removal of the projecting portion of the turbinate bone itself at the point of contact. In some instances this is what must be done. Where the projection is towards the floor, or towards the middle turbinate, this can usually be easily accomplished by the use of the snare, with or without the aid of the fixation needle. Where the projection surface is towards the septum it is, in the majority of cases, an extensive one, and to free the turbinate membrane there would be required the removal of a considerable length of bone tissue. Theoretically, the use here of the electro-cautery to furrow the surface of the turbinate, with hopes of an ultimate contraction into the burnt area, seems proper. In practice, however, it does not work so well, the turbinate tissue requiring repeated cauterizations, which in the end very frequently, naturally fail in their object of freeing the surface of the turbinate membrane, but result in marked derangement of the blood-flow through the mucous membrane overlying the rest of the inferior turbinate bony tissue, causing further chronic turbinate swelling. These cases, if left to themselves, often do better in the long run than they do after treatment, especially if the treatment be at all severe. The septum is more tolerant of turbinate mucous membrane which lies constantly in contact with it, at one point, than it is of the irregular, temporary contact which is characteristic of turbinates whose mucous membranes are intermittently swollen. In the last class of cases it is well to consult the sensations of the patient. If he suffers no discomfort, let the turbinate bony tissue alone. Of course, cases do occur where an extensive portion of the inferior turbinate has to be removed. These are, however, few.

In considering the inferior turbinate tissue, *the difference between hypertrophied and swollen turbinates* should be borne in mind. Some undue swelling of the inferior turbinate mucous membrane will be found in almost every nose examined, and may be the result of numerous causes, among which the climatic play no unimportant part. True hypertrophy, to a degree requiring operative interference, occurs comparatively infrequently, and then is the majority of times, found affecting the membrane along the posterior end of the inferior turbinate. The rule that where the puffy turbinate tissue shrinks under the application of cocaine, no treatment of this tissue itself is required, but where cocaine fails to contract it operative interference is called for, is a good one for beginners to remember. There are, however, numerous exceptions, notably those cases occurring chiefly in young persons where, from one cause or another, an obstinate vaso-motor paresis exists for the inferior turbinate membrane. In these cases, cocaine has little effect in reducing the swollen turbinate membrane,

the integrity of which, however, should not be destroyed by the application of the cautery—no matter how tempting be the thought of reduction by destruction—no matter how difficult be the cause to find. Again, a cold in the head, especially in its later stages, may produce much swelling of the turbinate membrane, the annoyance from which may again be excessive.

To attempt to reduce these swollen tissues in such a case by destructive agents is again badly directed therapeutics. It is a good rule, where your patient is suffering from a cold in the head, to reserve your opinion in regard to the true condition of the turbinate membrane until the cold has disappeared.

In all cases of nose trouble, we should bear in mind that the sensitive inferior turbinate mucous membranes have functions as definite as any in the human economy; we should know what these functions are and how subserved, and the more these things are kept clearly before the mind the less will the electro-cautery appeal to us as a proper therapeutic measure, to be used against the mucous membrane of the inferior turbinate.

CRAMPS AS AFFECTING STOKERS.*

By RANDOLPH M. MYERS, M. D., Washington, D. C.

As I have never seen any literature on the subject of "Cramps as Affecting Stokers," I thought, probably, the subject might prove of interest to members of the Society. I will, therefore, give the resumé of some of my observations while ship-surgeon on one of the trans-Atlantic lines. Cramps peculiar to other vocations have been thoroughly dealt with, but they differ, to a great extent, from those affecting stokers. I have never seen an American stoker. They are usually young men from the docks of all large seaports of Europe.

These men work from four to six hours in a very high temperature, with an intermission of four to six hours between watches. They are, as a class, about as poor specimens of humanity as you would wish to see, being thin and cadaverous-looking, but very muscular, as the work they perform requires a great deal of strength; while on shore, between trips, they give themselves up to all forms of dissipation, and are often brought on board in a state of "alcoholic coma." After being at sea for about two days, they will be suddenly seized with the most violent cramps in the muscles of the legs, which extend up the back and around the chest, the patient often becoming unconscious.

The doctor is seldom called until this stage is reached. The stoker may remain unconscious from a few minutes to several hours. His pulse is thread-like, and very weak. The temperature is, usually, a little above normal, and the skin hot. On coming out of this stage, they often complain of the most excruciating pain in the abdominal region. Constipation is also present. The patient is usually laid up for one or two days, but is sure, sooner or later, to have another attack.

Some of the peculiarities of the attacks are, they are more common on the trip out from New York; 2nd, the temperature of the stoke-hole seems to have no effect, as they have cramps in winter as well as summer; 3rd, some men seem exempt, but if they have one attack, they will invariably have others.

Of course, the ship-surgeon and the engineeers have to be on the lookout for malingerers. Some of the older men have the symptoms down so fine that they often impose on the doctor.

As to the treatment, I can say very little, as every ship-surgeon I have met has a different remedy, but all agree in giving morphia or opium insome form, sometimes in large doses.

I have tried all the remedies advised by them, but have always had the best results from a large dose of castor oil, followed by a saline, and keep the man on a liquid diet for a day or two. When the pain was very great, I also gave morphia in small doses.

It is not uncommon for a stoker, during one of the attacks, on coming on deck from the stoke-hole to jump overboard.

On "tramp" steamers that carry no doctor, the captain and chief engineer usually treat these cases. I have asked several what treatment they used, and find that almost invariably they give large doses of tr. opii.

As to the cause: I think it very hard to give. Every doctor seems to have a different theory.

I am of the opinion that the water has something to do with it, as cramps are very seldom seen coming from Europe, the stokers then drinking water taken on board abroad; but on the return trip, when New York water is used, they suffer more.

I have also heard it suggested that it might be "American beer."

It is very hard to follow up cases of this kind, for the reason these men seldom ship

* Read at a meeting of The Medical and Surgical Society of the District of Columbia, November 4th, 1897.

twice on the same steamer, but keep moving from one ship to another.

On the whole, their lot is a very hard one, and the pay very poor, and is about the last thing that a seafaring man will do to keep out of the poor-house.

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DISEASES OF THE ANTRUM.*

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In presenting this subject for your consideration this evening, I have decided to limit my remarks to that disease of the antrum which comes most frequently under your observation, and that which you are called upon most frequently to treat; that is, chronic suppurative, inflammation of the antral cavity.

It would seem almost a waste of time to go into an anatomical consideration of the antral cavity; its shape, situation, size, boundaries, position of the ostium maxillare, and the varying changes in its configuration. Nevertheless, under this capitulation, I think we would do well to take into consideration the fact that the antrum is not alone in a series of accessory cavities, that the antral and orbital cavities may communicate; and that the size of the antral cavity may vary greatly. As you well know, we have as accessory cavities the antral, ethmoid, frontal and sphenoidal sinuses. It is well to remember that the orifices by which the frontal, anterior ethmoid and antral cavities communicate with the nasal cavity are close together, and that anomalies do exist by which the pus pouring from the frontal or ethmoid sinuses may seek direct entrance into antrum, or false passages may exist between these cavities by which purulent inflammation affecting one of the upper of these cavities may give rise to an antral inflammation.

As bearing upon this point, it may be well to call attention to the fact that Dr. J. H. Bryan exhibited a drawing of a preparation in the Army Medical Museum, wherein was shown a direct communication between the frontal and maxillary cavities, and Dr. Fillibrowne, of Boston, states "that he examined eight cases in which the infundibulum, instead of terminating in the middle meatus, continues as a half tube, which terminates directly in the foramen of the maxillary sinus. In seven of these specimens there was a fold of membrane which served as a continuation of the unciform process, and reached upward, covering the foramen, forming a pocket which effectually prevented any secretion from the frontal sinus getting into the meatus until the antrum and pocket were full to overflowing."* Dr. Wright, in a discourse on Frontal Abscess, before the last meeting of the American Laryngological Association, stated "that the proximity of the mouths of the ducts of the frontal sinus and the ethmoid cells to that of the antrum of Highmore in the hiatus semilunaris would suggest that secretions from the ethmoid cells and the frontal sinus, in many cases, would drain into the antrum of Highmore. In my investigations I found that, by filling the frontal sinus with water, the fluid, in almost every case, instead of going out through the nose, passed into the antrum of Highmore." It is well to take into consideration the roof of the antral cavity, with its relation to the orbital cavity, and how occasionally an antral abscess may give rise to an orbital cellulitis. Through the plates I shall exhibit it will readily be demonstrated to you how the variation in the size of this cavity and its anomalous position, may give rise to great difficulty in operative interference and present dangers of great moment.

There seems to be some divergence in opinions as to the etiological factors which are instrumental in the production of this form of inflammatory trouble. Those who work in your field, or have investigated the subject through the reports of cases furnished by dental investigators, are inclined to believe that the greater majority of antral suppurations are the result of dental caries, periostitis, injury and abscess of the roots. Other workers in this field, who investigate the subject from a purely rhinological point of view, are inclined to believe the major portion of cases to be secondary to inflammatory reaction within the nasal chambers. There is no doubt that both these factors, the dental and the nasal, are productive of about an equal share of antral abscesses with a major tendency in favor of the nasal origin. In the abscess of dental origin it is not necessary that the pus penetrate from the root of the tooth into the antral cavity, or that the tooth project into the antrum; sufficient is it that the inflammation at the root of the tooth be great enough to involve not only the intermediate bony wall but also the overlying antral mucosa.

The nasal causes which give rise to antral

*Read before the Washington Dental Society, October, 1897.

*International Dental Journal, 1887.

abscess are influenza; acute catarrh, as the result of cold, as well as the same condition when accompanying the acute infectious diseases; chronic catarrh, simple, syphilitic or tubercular; nasal polypi, and new growths; suppurative inflammation of neighboring sinuses; exostoses; and injuries to the nasal cavities and walls of the antrum. In the nasal cases, the inflammatory reaction may be transmitted to the antral cavity, not only by direct continuity, but also through obstructing the ostium maxillare, thus setting up a passive congestion with an outpouring of serum, which becomes a nutritive field for the pathogenic organism, which is the producer of this form of inflammation. This brings us to the consideration of the bacillus, which is most frequently found in the pus issuing from or found within the antral cavity. The staphylococcus pyogenes and the streptococcus pyogenes, one or both are usually found present.

The subjective evidences of disease of the maxillary sinus vary greatly. In some patients the symptoms elicited are so pronounced and typical as to lead you at once to diagnosticate a probable abscess, while in others they are so slight as to cause you surprise when you find this cavity involved. Pain is usually a prominent symptom. There may be a feeling of distension of the cavity with tenderness to pressure over the canine fossa and zygoma. Neuralgic pain over the course of any of the branches of the fifth nerve may be present; but the most constant and persistent pain is that referred to the supraorbital region, in the forehead over the eyebrows. This pain over the eyebrow is usually greatest in the morning, and usually relaxes to a moderate degree after the movements incidental to performing the toilet, which partially empties the cavity and relieves the tension. Marked mental depression has been a very pronounced symptom in many of the cases that have come under my observation, the patients being excessively morose, hypochondriacal, and seemingly fearful of some impending disaster. Mental inactivity, with a disinclination for taxing mental application, is also common with those affected with this condition. A unilateral nasal discharge is complained of, which is of an offensive character. It will be found that this discharge occasionally issues from the nasal cavity when the patient bends forward. It is somewhat intermittent and entirely purulent. Odor is quite a characteristic evidence of abscess of the antrum of Highmore, and is sometimes the only subjective evidence of involvement of the cavity. The odor is that of hydrogen sulphide. The odor is decidedly intermittent, and especially is this the case when we find no purulent discharge into the nasal cavity. I have had under my observation three patients who sought treatment solely on account of this unpleasant odor.

In none of the cases above mentioned did I ever, during many inspections, see the slightest evidence of purulent discharge about the ostium maxillare or within the nasal cavity, although in all three cases was there antral involvement with cavities containing a small quantity of intensely foul pus. Slight septic infection may be manifested, as shown by chilliness, slight fever, and general loss of tone, with variable appetite. On inspection of the nasal cavity, we will find that there is fine creamy pus in the vestibule and running down from the ostium maxillare over the middle of the inferior turbinate body. If this pus issues from the antrum, it is yellowish semi liquid; from the frontal sinus, it is more likely to be shreddy and to have its exit higher up than when it comes from the antrum. After cleaning away all the visible pus, if the patient is made to incline the head well down and slightly towards the opposite side, and to hold the head in this position for several moments, it will be noticed, on resuming the erect position, that fresh pus is issuing from the ostium maxillare.

It is not always an easy question, when we find pus issuing from under the middle turbinate, to diagnosticate which of the sinuses are involved. Fronts has suggested percussion of the maxillare sinus; dullness more marked over the cavity indicates the one shown dull to be affected. In case of extreme doubt, we are greatly aided through the agency of trans-illumination and exploratory puncture. For the purpose of making use of trans illumination, it is only necessary to have an electric lamp of sufficient candle power, which can be attached to a tongue-depressor, or even used free in the mouth, or one of the more appropriate antral illuminators, such as that devised by Heryng or Chevalier Jackson. In making use of trans-illumination, it is an essential point that the room should be totally darkened. The lamp should be placed in the mouth and the lips closed well down upon the holder of the lamp when the current is turned on.

The diagnosis of empyema of the antrum of Highmore results when the following conditions are shown under trans-illumination: Opacity of the cheek of the affected side, opacity of the pupil of the affected side, and absence of the luminous sensation of the diseased side. Puncture

of the antrum by means of a trocar and canula is a comparatively simple test, and against which there can be no objection raised; especially if the symptom, complex, with the aid of trans-illumination, leave one in doubt. The puncture can be made through the inner wall of the antrum, that is, from within the nasal cavity; in the inferior meatus of the nose; through the outer wall of the antrum, an incision being made through the gingivo-labial fold, above the second molar tooth; or through the alveolus. After the puncture has been made, the cavity is washed out and the absence or presence of pus readily demonstrated.

Other conditions than disease of the sinuses giving rise to a purulent discharge from the nose and from which this has to be differentiated, are purulent rhinitis of children in which the discharge is bilateral; syphilis, in which the local and general manifestations are characteristic; foreign body, which is demonstrated by ocular inspection; and nasal diphtheria.

Prognosis.—A fatal termination of antral suppuration must be an exceedingly rare occurrence, though it is quite conceivable that such a termination could be brought about indirectly by involvement of neighboring cavities or sinuses, and thus extending to the cranial cavity. Septic infection could also produce a fatal termination. The recovery from an antral abscess, that is, the restoration to the normal, can be generally brought about, although the patience, ingenuity and skill of the operator may be greatly taxed in many of his cases before such a favorable issue takes place. The time required to bring about resolution depends upon the cause, the duration of the abscess, the thoroughness of treatment, and many incidental factors.

Treatment.—I have very little patience with any line of treatment other than that which seeks to remove the cause, the conditions excited thereby, and restore the tissues to their normal state in the most expeditious manner possible. The spraying of detergent solutions into the nasal cavities, and the washing of the antrum through the medium of a canula introduced into the ostium maxillare, seem to me to be playing at a cure.

Growths within the nasal cavity or other pathological conditions tending to maintain the antral condition should be removed and combatted Diseased teeth should be removed. The fronto-ethmoidal sinus should be carefully investigated in order to ascertain if they are normal; and when found diseased, they should be attacked at the same time that the antral condition is meeting with your attention.

The causes, under direct observation, having been removed, we now turn our attention to the best manner in which the abscess can be drained, the cavity inspected and cleansed, and maintained free of pus, so that there may be brought about a rapid resolution. The three points at which the antrum can be opened for dependent draining is either through the alveolus, through the inner wall beneath the inferior turbinate or through the outer wall in the canine fossa, or directly above the second molar tooth. Each operative procedure has its advocate; each advocate gives reasons why one particular method is better than the others.

In many cases, especially those due to diseased teeth, the alveolar method should be decided upon as the operation. All diseased teeth and roots should be removed, and a good long free alveolar opening made. I have ceased to consider teeth when I have a nasty antral abscess to combat, if removal of these teeth can in any way aid me in bringing about the cure of my antral abscess. The opening through the outer wall is especially to be considered when the teeth are perfectly sound and seem in no way to have any causal relation to the pathological condition in hand. This operation is best done under general anæsthesia. The gingivo-labial mucous membrane is incised at the point where it joins the outer wall of the maxilla. The incision should be an inch or more in length, parallel to the border. The mucous membrane and periostium are now pushed back and the surface of the bone broken through with the chisel, or opened with a trephine. The wall is very thin at this point, and the opening is made almost immediately. A large enough opening should be made, at least large enough to enable one to introduce the little finger. Considerable cellulitis is apt to ensue after the operation, but it usually subsides without unpleasant results.

The nasal method of operating seems to offer no advantages. The hæmorrhage is apt to be very annoying during the operation, as well as at each subsequent treatment. The after-treatment must be more painful and more difficult than by either of the other methods, and cannot promise more. I must be frank enough to say I have never resorted to it.

The method of opening through the outer wall and then making a counter opening below the inferior turbinate, is a capital method of obtaining through and through drainage in very obstinate and taxing cases. After the cavity has been opened, by whatever method, it should be thoroughly washed out and then subjected to a thorough and rigid exploration with either

the little finger or with a probe. If necrosed or carious bone is detected, or projecting fangs of neighboring diseased teeth should be exposed, they should be removed. Occasionally you will find ridges, partitions, or secondary cavities which will have to be broken away and united. Growths you will seldom find, but frequently you will notice the mucous wall of the antrum to be in a condition varying from a minute granulation to an excessive villous state. When we meet this latter condition, the mucous membrane should be curetted, but extreme care should be exercised in carrying this out, and especial regard must be taken when working with the curette in the vicinity of the ostium maxillare. The antrum should be thoroughly irrigated again with a saturated boracic acid solution, and the cavity well but not tightly packed with iodoform gauze. The gauze can be removed after several days, the cavity well flushed out with the boracic solution and repacked with gauze. This procedure must be repeated several times, when the gauze is finally left out, and if there is no further showing of pus in the daily cleansing, the cavity may be allowed to slowly close itself.

Unhappily, such a rapidly favorable issue as above outlined is not the rule. In most cases, several days after the removal of the gauze we find pus beginning to again appear in the water at irrigations. We must now be content for a time with frequent irrigations of boracic acid, permanganate solutions or hydrogen peroxide. I have had very little faith and absolutely no success with the hydrogen peroxide. Besides the cleansing out of the cavity with these solutions, I inject into the cavity, after it has been thoroughly irrigated and dried, a solution of iodoform in benzoinal, occasionally alternating with a five-grain solution of nitrate of silver. I find the Myles irrigation by far the best. I inject the solutions through the medium of an Anal's syringe. The use of the iodoform in suspension in benzoinal is preferable to the insufflation of iodoform, as the iodoform can be more uniformly distributed over the whole antral surface than can be done by insufflation.

Dr W. Scheppegull, of New Orleans, read a paper before the American Laryngological, Rhinological and Otological Society at its annual meeting in this city last May, in which he strongly advocated the use of ozone in the treatment of obstinate cases of abscess of the antrum, claiming remarkably favorable results in the few cases that he had treated by this method. From verbal reports of several of my colleagues, I have also heard good reports of the use of this powerful oxidizing agent.

The treatment of abscess of the antrum is not always a simple question, not always attended with a rapidly favorable issue. Oftentimes it will require great patience, both on the part of the patient and from you, before a favorable result is brought about. At times you will find that the flow of pus has ceased for several days, when, without any apparent reason, your patient has a relapse. Disappointment is very common to one who treats many of these antral suppurations, but patience, perseverance and persistent thorough treatment will win out in most of the cases that come under your observation.

1102 *L Street.*

A BOUQUET OF REMEDIAL AGENCIES; OR, MENTAL IMPRESSION AS A THERAPEUTIC AGENT.*

By JOHN P. STUART, M. D., Attalla, Ala.

Those who heard my paper last year on "Medicine—Hippocratic and Operatic"—are fully convinced that I am opposed to quackery or mendacity in medicine in any form. Yet, for fear that that paper may lead some to that extreme of blunt honesty which drives the trembling hysteric into the open arms of devouring pirates of trade, I present this *Bouquet of Remedial Agencies*, which, I believe, are legitimate, though phantasmatic, in certain cases and under certain conditions.

Hitherto, our good, honest, scientific and uncompromising doctor has poo-pood every complaint, every tale of woe, or story of suffering poured into his unsympathetic ear, which failed to show sufficient cause for disease; and the timid neurotic has sought *and found* a place to carry his woes and dollars in the legion of quacks that wait without the walls of legitimate medicine—ready to devour just such blind, eager victims. And so, it behooves us not to stand idle all day, while the harvest is waiting. Let none go by that seek our help. And if it takes flowers instead of bitter-herbs, attar of roses instead of assafœtida, it should not only be our duty, but our pleasure, to give them, red-hot, ice-cold, sugar-coated, gilt-edged, and soft-soaped, to that degree that will give satisfaction to the mind, taste and fancy of our

* Read before the Tri-State Medical Association of Alabama, Georgia, and Tennessee, in Nashville, October 12, 1897.

patient. This will make them comfortable and grateful, and render them more useful, if not ornamental.

Psychiatry has long been a deep study with scientific men. From the days of Plato, Socrates, Aristotle, Hippocrates, and Galen, on down, such poor afflicted mortals have been a phenomenon to the profession. They have been possessed of gods, devils, demons, witches and what not, from age to age, until now, the peculiar vagaries, whims and idiosyncracies of the many thousand diseased minds that teem the pages of scientific history and psychology, are puzzling mysteries, and baffle all laws in nosology, classification or system.

We have some psychical manifestations that fill the soul of the spiritualist with felicity. There is no rule to guide the neuropath. Each individual case must be studied out and treated according to its own peculiarities. Yet, there is one thing to be remembered: These morbid conditions must not be classed with the imbecile, demented, or insane. Their minds are bright—sometimes remarkably so; their ideas fine, their conversation intelligent, and often entertaining; they have a lucid idea of the cosmology of things, and an appreciation of their natural eternal fitness. Such a mind can be but little affected. Yet, upon one thing the cog slips and the loose screw goes rattle-a-tap, till you wonder, as you gaze into the face of your whining patients, if they are crazy or unconditional fools. Here is where we must have patience with our patients, smile our sweetest, and listen with great interest and deep concern to their long-winded and tiresome tales of woe. Look wise and say much, using all the medical terms that can be agglomerated into verbose and long-drawn sentences. Have a deep and learned name for every ache and pain; and prescribe some anodynal placebo, until you have time to study your case. Get the history of parents, brothers, sisters, etc., and learn all the surrounding circumstances, habits, etc., if it takes months. When master of the situation, you can, by using little medicine and lots of "sphengallism," effect a permanent cure. A strong mind is good medicine for a weak mind; some people love witchery, mystery and myth; they feed on it with as much gusto as a hungry wolf on the dead carcass of a tender lamb. Give them all they want; don't let them go away dissatisfied; if you do, they will hunt a cure in some other doctor's office.

It is a smart doctor that keeps the *modus operandi* to charm this class and knows how to work it for their mutual good.

I present for consideration four cases, rather remarkable, that have come under my observation:

Case I.—Several years ago, I was locateed at Auburn, Ark. I was young in years but old in experience. A negro rode up to my office and said: "Docter, Miz Sample sent me for you, post-haste." I went. Mrs. Sample was a wealthy widow, with a fine home and plenty of the good things of this life. I was met at the door by her daughter, Mrs. Lee, another but quite younger and better looking widow.

"You are Dr. S.?"

"I am."

"I am Mrs. Lee, Mrs. Sample's daughter. One word before you see my mother. There is nothing on earth the matter with mamma. Our family physician, Dr. Pillsby, who has just left, assures us that it is only a case of hysterics; he and all of us have tried to reason with her, to no purpose. She holds out that her right eye is glass, and is giving her excruciating pain. Dr. Pillsby has given her morphine, chloral and bromides ineffectually for the last five days. She won't let us use hot cloths for fear of cracking the eye. She takes on terribly. I tell you, doctor, I don't know what we'll do; poor mamma. I fear she is going crazy." And the pretty little woman sobbed on my shoulder.

"My dear madam, calm your fears," said I. "Your mother shall be restored, both in mind and body; its fortunate you have sent for me. My large experience with these nervous cases in the hospitals in Paris, has given me abundant experience to deal with and treat just such maladies as that of your mother. You take your cue from me, and let the rest of the family do the same. We will indulge her whim for awhile, and see how that works."

With that, I was led into the sick-room. Mrs. Sample looked at me critically. In that first gaze we measured one another's strength. She was a strong-minded, determined-looking woman, but her eye fell before mine.

"So! You are Dr. S.?"

"Yes, madam."

"I thought you were a man. I didn't want a boy."

"Pardon my youthful appearance, I'm older than I look. Twenty-five years, with ten of them in the study of medicine, five of which have been spent in England, Germany and France. I understand that you have been suffering with your eyes."

"Have been! indeed, I am now."

"Will you allow me to examine them?" I put on my gold eye-glasses, directed Mrs.

Lee to hold the lamp very near. I looked long, and carefully touched around, over, on and under the right eye-ball tenderly—oh, so tenderly—"Have you experienced much pain in this orb, Mrs. Sample?"

"Oh heavens! excruciating. Oh, Doctor, I can't express it; oh I."

"Umph hum; I thought so, neurodynia of the cephalic lenticular ganglia."

"That's it exactly," she exclaimed.

"Does this eye ball feel hard and glassy?"

"Very glassy, Doctor, very glossy; that expresses it—very glassy."

"Umph, hum, glaucomatous ophthalmia vitrissi."

"I thought so all the time, Doctor."

"Do you find it difficult to open and close the lid, Mrs. Sample?"

"Very difficult, Doctor, very difficult."

"Umph hum, partial paresis of the levator superioris and the orbic palpebran."

"I was sure of it—there now."

"Yes, mam, Mrs. Sample, your trouble is grave—very grave—but I can save your eye."

"Oh, can you, Doctor; I'm so thankful."

"Yes, I can only give you relief from pain to-night, and by telegraphing to Memphis with instructions, if the medicine is not there to telegraph to New Orleans for it, we can have it here in a few days, and have you well in two or three weeks, if you are careful and follow my directions explicitly."

"I'll do it, Doctor. I am so thankful you came. I told them all the time that old Pillsby was a fool."

I gave her an anodyne and Mrs. Lee some taffy, and rode away. After the next boat from Memphis, I carried up a bottle of perfumed rain-water, labeled extractum collyrium, one drop in the eye three times a day on an empty stomach. She got well, and paid me a hundred dollars.

Case II. I was called one night to see a Mr. McCormac. His wife met me at the door, and told me he was talking out of his head. Mr. Mc had seen me quite often; knew me well, and had confidence in my ability as a physician. As I entered the sick room, Mc said: "I'm glad you have come, Doctor. I told Charley that you were coming, and he said if you came he would have to go." Further questioning brought out the fact that Charley was an imaginary person, who was ever present, and talked to him damanding money, whiskey, tobacco, etc., which Mc would give to appease Charley's wrath. These things he would hide under the bed, corner of the house, etc., as Charley would direct.

"What Charley is this, Mr. Mac?"

"Just Charley is all I know."

"What sort of looking man is he?"

Mac gave a full description, color of hair, eyes, beard and clothes, size, etc.

"Well," I said, "we will lay a trap for him, and when he comes to get his boodle I'll blow his brains out."

At this Mac was very much excited and frightened. "Oh no, for God sake don't hurt Charley; if you do they will kill me."

"They? Who?"

"His friends; he said so. He told me if I ever hurt or caused him to be hurt his friends would come after me."

"Well, well, I'll not hurt him, then; be quiet, and when he comes, just ask him what he'll take to let you alone." This was agreed upon.

So, next day, on my return I was informed that Charley would vacate for $100; the money was to be put through the holes in the water closet by 3 P. M., not later. I made my arrangements, and at 2:30 Mac and I went down and dropped the money at the required spot, and watched. Soon a man, answering the description of Charley, as Mac had given me, came and carried off the money, and from that day to this Mac has'nt been bothered with Charley any more. All I charged was the $100 Charley never got.

Case 3.—Mandy Vincent, a negress, aged 35, sent for me one day, and said: "I has sont four you, Doctor, but I don't think you can do me much good. I'ze bin conjured. Dere iz a lizzard in my arm, and its crawlin, crawlin up towards my shonlder; and when it gits to my heart it will kill me shure. Now, unless you can took it out, I'ze er dead nigger. Dr. Bluemass sez dars nothing dar, but he aint got my feelins—no sah."

"My dear aunty, Dr. Bluemass, has never lived among the Hoodos down Mobile, like I have. I know all their tricks. I was raised by 'um."

"Was yer, Doctor?"

"Yes; I've got alligator teeth, left hind feet of graveyard rabbits, snake-bones, and load-stones to burn. Medicine won't do you any good, but I'll take that lizzard out of your arm, and don't you worry. Wash your arm seven times seven days in this water. Then I'll come back and take it out; have all your friends here on that day."

This negress had been under treatment of four white and one negro physician. She had emaciated from 148 to 85 pounds. The negro doctor had buried the affected arm in a clay-root, and kept that poor negress sitting by on

the cold ground for three days and nights to no purpose; the lizzard still remained. She was in a pitiable state of mind and body.

On the appointed day, I repaired to her house armed with a lizzard that filled the description in size, etc., like the one in her arm, snake-bones, alligator teeth, etc. The house and yard were full of negroes who had come to see the show. I brought my patient out under the trees in the yard, and placed her on a cot. "My friends," I said, "some devil in human form has put an affliction upon your sister here that science, skill and medicine have failed to remove. Only the great power of magic can conjure away this trouble. I am here to-day to try its effect."

I rolled the sleeve of the injured arm up to the shoulder, and placed in her hand an empty quinine bottle, open-mouthed. I covered her hand and bottle with a silk handkerchief. I then attached the positive pole of a galvanic battery to the wrist, the negative poles to the shoulder. I hung on some chairs, conspicuously snake bones, alligator teeth, rabbit feet, and loadstones holding strings of steel beads. I then took a human skull (which had been previously filled with wet gunpowder) in my hands.

"Now, my friends, I'm ready. I'm going to call for fire from the skull, and when you see the smoke there will be some change felt by Aunt Mandy."

I raised my hand and one eye to heaven; the other I kept on the skull to see when I got the focus. "Send us fire, oh solus orb of day, one mighty concentrated ray." A dense white smoke, smelling of sulphur and brimstone, arose. I dropped on one knee and touched off the battery; there was a scream from Mandy, a murmur of alarming wonder from the dusky audience, and amid the smoke and confusion, presto, and I lifted the quinine bottle up to the astonished gaze of my spectators, for in it was a real, downright sure enough live lizzard. "This, my friends," I exclaimed in exultant tones, "is the monster that has been troubling your neighbor. Our efforts have been crowned with success; she is free at last from her misery."

Mandy rose from her couch laughing and shouting. She soon grew strong and well, and lives to day to confirm this story.

Case IV was the most interesting of all. One morning, a pretty and accomplished young lady rushed into my office and sank exhausted in a chair. After a few moments, which she took to recover her breath and calm her great agitation, she asked me if love ever killed; if it ever broke a heart?

"Sometimes," I answered as gravely as possible.

"Oh, Doctor," she exclaimed, and she threw herself at my feet, clinging to my knee with her violently trembling hands; and looking up into my face with streaming eyes, trembling lips and heaving breast, "Oh, Doctor, I love a man."

"My dear, most women do at some period of their lives," I answered calmly.

"But this man cares nothing for me, poor me," she moaned, "and I love him so dearly, so passionately, so madly. I want to die."

I let her cry awhile. "Your dying, my dear Lucy, will not trouble him, but will cause your friends great grief. Let me help you out of this difficulty."

"Oh, Doctor, if you can, I will be so happy and thankful; but there is no help—no, no, none unless he loves me."

"Come, calm yourself. I'm your friend. Tell me who this man is, and unless he has a heart of flint I know a way to make him love you." This promise had the desired effect. She grew calm, and told me her little story.

It seemed that all the love was on her side; the man was a bare acquaintance, and was innocent of the passion he had inspired. But I gave her hope, which naturally springs eternal in the human breast. I told her that I knew of certain occult means in clairvoyancy that would change the indifferent heart of stone into a seething furnace of consuming adoration. She must, however, do her part; I would do mine."

"Love goes by contraries. You must practice control, and assume indifference and be patient. It will take time for me to consummate my plans; but if you wish me to attain the desired end, do nothing rash before consulting me. You are foolishly undermining your health by giving way to your feelings. The healthy alone are beautiful, and beauty wins love. I will manage to give this young man a love philter, while you must take this tonic for your health, and trust in me."

I put her on an elixir of the bromides, and directed cold shower-baths. In the mean time I gave her parents sufficient hints, so that they might arrange diversion. In the course of a few months we had her cured of her infatuation.

Fortunately for this girl, she came to me in her trouble; they usually go to morphine, the rope or the river. We should watch for these cases, and anticipate fatal results. The reason this girl came to me, I afterwards learned, was because of her negro servant-maid, to whom I

had given some "love-powders" that worked like a charm, she told her mistress.

In presenting these four cases, I have drawn for your consideration four great varieties: 1st, Imagination; 2nd, Hallucination; 3rd, Superstitition; 4th, Adoration.

In the first case—Imagination—we have a person of refinement, education and wealth, who imagined her affliction, pure and simple. This brought on her pain, and suffering of mind and body, and distress to her family, which would have ended in death or the asylum. The cure was purely phantasmal; the result was happy healthfulness.

In the second—Hallucination—the patient was followed by this man Charley continuously. His days were full of misery, worry and dread; his nights, of fear, anxiety and horror. He was fast going into decay of mind and body. The cure was equally illusionary; but the result was permanent restoration to a healthy mind and body, with a capacity for business.

In the third—Superstition—we have a trouble born of the superstition of the South, especially in the negro race. We are all superstitious, more or less. We don't want to sit with thirteen; we dislike the new moon through a tree top or over our left shoulder; we don't want to start anywhere on a Friday; we plant in the moon, and operate when the signs are right. These things we laugh at, yet religiously adhere to. At any rate, this case would surely have ended fatally. The remedy was purely fantastical in the extreme; the result was an absolute and perfect cure.

The fourth—Adoration—was an unhealthy, unsought love; there was not only no effort nor inclination on the part of the man to gain this girl's affections, but a total lack of knowledge or cognizance that she cared in the least for him. A love like this is absolutely out of rhyme or reason; there is no cause but disease. We love ourselves because it is natural; we love others because they love us. But a blind, unsought love, unasked, unexpected, undeserved, without association or cultivation, is the foolish longing of a vapid mind. This girl's affection had no relation to nynphomania, erotomania or veneria; she was unqualifiedly modest, virtuous and maidenly. Her desire was not for *any* man, but *one* man. She thought that life would be but a desert waste if not shared with this certain individual. And it was months before we cured her of her malady.

A cure should always be attempted in these cases, rather than an effort to bring about a union between the parties, because a love that comes thus involuntarily is an unhealthy, unstable affection, and will not wear well. These are the kind that fill divorce courts, and make marriage a failure. Healthy love is of slow growth, enduring and lasting. The majority of our suicides are caused by this wild, abnormal, morbid *adoration;* the whole being is consumed with the one idea. The mind, the heart, the day, the night, are all filled with one desire. The patient becomes absorbed in a whirlpool of passion; the appetite fails; she grows nervous, restless and sleepless; soon becomes unfit for business or society; she feeds on dime novels, and impossible tales of foolish love. They go star-gazing and moaning around; they pine away, emaciate and decline; and if they can't get the world, with a wire fence around it, they commit suicide, and end their worthless existence. And they ought to, if it were not our duty to save them. They are diseased, and their malady is of no slight consequence. Love a disease? Yes, this kind is, and a bad disease, too. We must treat it intelligently, carefully and seriously.

I know that there are many who are ready to say that these cases are only the temporary rattle-brain folly of youth. But during the temporary, rattle-brain folly of youth there have been said and done things that marred the whole life current thereafter, and caused what otherwise would have been a useful career to be diverged into the byways of degradation, sin and vice. Our prisons, hospitals, asylums and slums are filled with neglected cases of temporary rattlebrain follies of youth.

We must shoulder the responsibility largely of the moral as well as the physical health of this neurotic *clientele.* Many physicians are responsible for the whiskey, morphine and cocaine fiends, with all the social and moral degradation that accompany these habits; and yet there are other more demoralizing and degrading practices for which the profession has been held responsible.

In fact, our position in society, our high place in the world of science, our close relation to the life, health and happiness of our fellow-creatures, place upon our shoulders responsibilities of much magnitude. No one should take upon himself these duties unless he fully understands their greatness—a true heart, a strong mind, a healthy body—*mens sana in corpore sano*—with Atlantian shoulders fit to bear the weight of mightiest monarchies.

In these four cases given, the question of justified treatment is paramount. Does the end justify the means? Are these remedial agencies legitimate prescriptions? The voca-

tion of our science is to throw a protecting wall around the healthy, and by quarantine, sanitary and hygienic regulations, make the human family healthier, stronger, wiser and happier. Then, perchance, should dread disease in any form make a successful attack upon our walls and storm the citadel, our duty is to fly to their relief, and take up any weapon that will successfully combat the enemy, and cause that much dreaded grim monster Death to plume his mighty sombre wings and take his limitless flight back to the realms of endless night, unencumbered by the weight of another untimely victim.

Correspondence.

National Quarantine—Protest Against the U. S. Marine Hospital Service Assuming Charge of Affairs in Yellow Fever Epidemics, etc.

Dr. Warren E. Anderson, of Pensacola, Fla., having been asked by Hon. Frank S. Gardner, Secretary of the New York Board of Trade and Transportation, for his views of the United States Marine Hospital Service and quarantine matters, sent the following letter:

Dear Sir,—In response to your inquiry concerning the efficiency of the Marine Hospital Service in the conduct of Federal Health affairs, I desire now to answer your queries briefly, but by the presentation of such facts only as may not be successfully controverted, and which are detailed without malice toward any one or animus of a personal character whatever.

The *first objection* to be urged against such control of our health affairs by this Service or branch of the Federal government is one relating to organic construction. You are doubtless familiar with the fact that only applicants between the ages of twenty-one and twenty-eight years are examined for admission to this Service, and you may easily infer that 98 per cent. of them have never had experience with epidemic diseases such as are likely to prevail at any time in our country. That they may be skilled in bacteriological lore, I will readily admit; that they are without practical knowledge of any epidemic diseases, they are, I am sure, also honest enough to confess. Thus, a young graduate from a Maryland, Michigan or Massachusetts medical college, standing an excellent but purely theoretical examination before the Board of Examining Surgeons, is dispatched by his chief to preside over the health destiny of New Orleans, Galveston, or Mobile, with no more knowledge of the character of the prevailing diseases, or the commercial necessities of the people, than an Ashantee chief possesses of the military strength of Gibraltar.

The *second objection* is largely an emphasis of the first, relating, however, more nearly to the fact that these officials are taken indiscriminately from every part of the United States, less than 5 per cent. of them belonging south of latitude 37, or that area of the country likely to be invaded by yellow fever—our most common and most dreaded foe. Less than 10 per cent. of the regular force of the Service have had any experience with this disease and less than 3 per cent. are regarded by sanitarians or the general public as possessing any knowledge of this disease whatever. Possibly 2 or 3 per cent. may have acquired immunity from the disease incident to the South, either by residence or a previous attack of such disease. What a commentary upon the much advertised and magnificent equipment of this Service for the health preservation of this country!

The *third objection* is one relating largely to the autocratic management of this Service. Its officials are responsible to no one but the head of the Bureau at Washington, a Cæsarian system of government. See the utter disregard manifested for the health of the people of Georgia in 1893, when the medical officers of the Service at the quarantine station sickened with yellow fever (the first victim) was removed to the principal hotel at Brunswick, where he died, and an epidemic of the dread disease followed. Witness the humiliating spectacle of Mississippi's delegation to the Federal Congress pleading in vain for the removal of a near and constant menace to the health of their beloved State—the Ship Island Quarantine Station. Then ask yourself if the Czar of all the Russias could lend so deaf an ear to the plaintive wails of his humble subjects?

The *fourth objection* is one based entirely upon the past inefficiency of this Service, as compared with the alleged weak control by the State. Twice in four years at quarantine stations operated only by the authority of this Service, yellow fever has gained entrance to our country, put to flight its people, and ruined its commerce; whereas, under the management of the much-despised State Boards of Health of quarantine stations, exclusively in their possession, no such invasion has occurred for nearly twenty years, save in Florida, and there not since the creation of the State Board of Health

some nine years ago These are cold stubborn facts, the proof of which, if desired, can be obtained from contemporaneous authorities or the archives of the Marine Hospital Service at Washington.

That the Service is equipped in any adequate manner—save in the possession of a magnificent bacteriological laboratory—for the protection of the people of the United States against the invasion of epidemic diseases, it were sheer folly to contend. That it is thoroughly equipped in this one particular, I am willing to believe; but I still maintain that the use of a few grains of common sense in the management of Federal quarantine matters is worth barrels of gelatine culture, uniquely prepared and labeled, for the inspection of the distinguished microscopist, while helpless communities are being ravaged by pestilence and panic.

It is not my object or purpose to hold the head of this Bureau, Dr. Wyman, responsible for its many defects, as I consider most of them organic in their character, and far beyond the reach of any reform measure he might desire to institute. It is as impossible to unite a sailors' hospital service and the health affairs of this great country as to mix oil and water. The attempts of the future in this direction will show as dismal and disastrous failures as those of the recent past, and I believe the history of the world does not present a parallel to so gruesome and absurd a system. Let us try, however, to obtain a system wherein are combined the wisdom and judgment of the State in the matter of the appointment of its own citizens to these responsible positions, and the enormous power of the general Government to control and direct the operations against the common enemy. Let us have a Marine Hospital Service and its capable ministrations to sick seamen; but let us also have a separate department of public health, composed only of men of known ability and experience in such matters, whose sole object and aim shall be the promotion of the health interests of the entire country.

If this cannot be done, for one I shall prefer a continuance of the control over maritime quarantine by the State, to the exercise of these powers by a Service so incongruous and so unsuccessful as this autocratic Bureau of the Treasury Department has demonstrated itself to be.

The idea of a *Department of Public Health* has taken a firm hold upon our people; from North, South, East and West come indorsements of such a general system—marked by many differences of opinion, it is true, as to minor details, etc. The press of the country, almost without exception, commends such a course; commercial organizations approve of it enthusiastically, and the two great bodies of advanced scientific thought on this continent, the American Medical Association and the American Public Health Association, have given it an unqualified indorsement. So far as my information extends, the sentiment in favor of the supervision or control of the public health, both maritime and domestic, by the Federal government, is as overwhelmingly in favor of such a system as it is diametrically opposed to the management of the Marine Hospital Service, and I believe such opinions will assume a concrete form not differing materially from the ideas embodied in Senate bill No. 2343.

I desire to publish this communication, as I believe it more fully emphasizes my position than any other communication which I have written.

Very truly yours,

WARREN E. ANDERSON, M. D.

Pensacola, Fla., December, 1897.

Proceedings of Societies, etc.

MEDICAL AND SURGICAL SOCIETY OF THE DISTRICT OF COLUMBIA

Dr. JOHNSON ELIOT, Reporter.

November 4th, 1897.

The Executive Council having favorably reported the nomination of Col. Wm. H. Forwood, U. S. A., he was unanimously elected to Honorary Membership.

Dr. James D. Morgan read a paper [see page 547] on

Facial Manifestations of Disease.

DISCUSSION.

Dr. Vincent was much pleased with the paper. The ground was so well covered that there could be nothing added. One cannot judge entirely by the face; other symptoms must be taken into consideration. A great deal can be told by the expression, but further search must be made before giving too positive an opinion. This is especially so in jaundice, diarrhœa, and pulmonary affections, and in children. The eye is also an important aid to diagnosis.

Dr. Kober said one thing had suggested itself, that was not referred to by the essayist, and that was the lack of confidence the patient had in his physician; he referred to a case seen in the West when he was quite a young practitioner. He had been called to attend a man who was sick with typhoid fever. The expression of the man's face showed that he had little confidence in his ability to cure, and the case progressed badly; when he succeeded in gaining the patient's confidence, an improvement set in immediately.

Dr. Wyman said that facial expression plays quite an important rôle in diagnosing was but recently brought forcibly to his mind by a conversation with Dr. Guiteras. Dr. Guiteras had been sent to the South to pass upon doubtful cases of yellow fever. There was a peculiar flush or color of the cheeks that was so constant that he could make his diagnosis from it. He did not rely upon this alone in making his reports, but carefully considered all the symptoms.

Dr. Stone said facial expression may mean a great deal, or it may mislead one. The study of the face is quite marked among country practitioners. All of us have seen patients where we could satisfy ourselves as to their condition simply by looking at them; what we see no one can tell, but there is something in the expression which tells its story.

Dr. E. L. Morgan said many men make excellent physicians who can simply read the face. The tendency of modern medicine is to depend too much upon mechanical appliances. The older practitioners cultivated the senses more, and could distinguish many different characters of pulse.

Dr. J. D. Morgan, in closing, had little to add. He had never seen a case of yellow fever, but it is stated that yellow coloration is found on the forehead near the hair.

Dr. R. M. Myers read a paper on

Cramps as Affecting Stokers. [See page 552.]

New Synonym of "Shingles."

A little boy was sent to the family physician to diagnose an eruption in the course of the terminal twigs of the intercostal nerves. The doctor diagnosed it as a case of "shingles." When the boy returned home, in answer to a question by the mother as to what the doctor said, the little fellow promptly replied: "The doctor said I had *slats*."

Book Notices.

Hand-Book of Materia Medica, Pharmacy and Therapeutics. By SAMUEL O. L. POTTER, A. M., M. D., M. R. C. P., Lond., Professor of Principles and Practice of Medicine and Clinical Medicine, College of Physicians and Surgeons of San Francisco, etc. *Sixth Edition. Fully Revised and Greatly Enlarged.* Philadelphia: P. Blakiston, Son & Co. 1897. Large 8vo. Pp. 900. Cloth, $4.50 net; Full Leather, $5.50 net. *Thumb Index in each copy.*

Few books are so popular as to demand a sixth edition in ten or eleven years. It is easy to understand why this one should be. Viewed from one standpoint, this work stands as the representative of that class known as *multum in parvo.* From cover-lid to cover-lid, every space is occupied with some valuable practical statement. The work includes "the physiological action of drugs, the special therapeutics of disease, official and practical pharmacy, and minute directions for prescription writing." In the "Appendix," beginning on page 816, an immense amount of practical information is stated, relating to Latin terms, etc., hypodermic formulæ, patent medicines, differential diagnosis of the more important diseases, temperature in disease, urinalysis, treatment of poisonings, tables of specific gravity, of drops and weights, of prescription doses and quantities, of metric conversions, etc.

As compared with former editions, the present is in effect a new book. It contains about a hundred pages more matter than its immediate predecessor, in which are 46 new articles and 170 rewritten ones, beside many hundred sentences incorporated into the original text. A most important new article is one on serum therapy. In the introduction, terms are defined and general historic remarks are made. The constituents of vegetable drugs are given in brief. Then come sections on the administration, the dosage and the classification of medicines. Beginning on page 65, the articles of the materia medica are alphabetically arranged and their therapeutic uses given. Part II, beginning on page 493, is devoted to pharmacy and prescription writing, in which are some pages well worth reading by doctors as well as students because of the excellent suggestions in them. After a few pages relating to Incompatibilities, about 50 pages are taken up with official pharmacy. Special therapeutics occupies about 250 pages—all of Part III—the diseases being arranged in alphabetical order, with proper cross references. This Part III is

of special value to the practitioner—oftentimes suggesting therapeutic agents that had been overlooked when needed in prescription writing. The Index is complete. The book deserves the success which is in promise for it.

Practical Treatise on Diseases of the Skin. By JOHN V. SHOEMAKER, M. D., LL. D., Professor of Skin and Venereal Diseases in the Medico-Chirurgical College and Hospital of Philadelphia; Physician to the Philadelphia Hospital for Diseases of the Skin, etc. *Third Edition—Revised and enlarged; with Chromogravure Plates, and other Illustrations.* New York: D. Appleton & Co. 1897. Cloth. 8vo. Pp. 894-xiv.

While the enlargement of this edition consists in the addition of only about twenty pages, yet the revisions of the text have been complete enough to bring it fully up to present confirmed advances. A value of this work is that the author has not rushed into print with every "fad of the day," but has adopted, almost altogether, only that which has been proven. Hence, the work is reliable in description, in diagnosis, and in therapeutic suggestion and detail. For the young practitioner, the prescriptions written out are serviceable. With reference to the base of ointments, the author repeats what he wrote over twelve years ago in objection to the use of petroleum products. "Vaseline does not decompose, but it *prevents* the entrance of medicaments into the skin; so that even poisonous substances, when mixed with vaseline and rubbed into the skin, produce neither local nor constitutional symptoms of poisoning." We repeat this well-confirmed statement simply because it has been too much overlooked by practitioners, who persist in using vaseline as the base for their ointments, and then go about decrying the value of any ointment. Lard, suet and lanolin possess the power of penetrating the skin. "The addition of benzoin, or a small quantity of B-naphthol, will prevent lard from becoming rancid for a long time." "Lanolin possesses great absorptive action, and, through its neutrality, its own decomposition is out of the question, and consequently it will not irritate the skin. Suet forms a serviceable vehicle for the application of many medicinal substances to the skin. We instance these remarks simply to illustrate the constant practical character of the recommendations of the author. The illustrations are about the same as those used in the former edition It seems to have been an oversight of arrangement of quoting from the second edition the formulary of medicinal soaps. Why page 869 of the third edition should not have been transposed, or incorporated in the section on the same subject beginning on page 820, we do not understand. Such transposition would have made the two sections more convenient for ready reference. However, the Index is good. It speaks well the popularity of the book that a third edition should have been so soon called for after the publication of the second edition. The work as it stands would make an excellent text-book for colleges, etc.

Lectures on the Action of Medicine. By T. LAUDER BRUNTON, M. D., D. Sc., LL.D., F. R.S., Physician and Lecturer on Pharmacology and Therapeutics to St. Bartholomew's Hospital, etc. New York: The Macmillan Company. 1897. Cloth. 8vo. Pp. 673-xv. Price, $4.

This work consists of a course of thirty-five lectures on pharmacology and therapeutics, delivered at St. Bartholomew's Hospital during the summer session of 1896, by the distinguished author, whose writings are as much prized in this country as they are by his warmest admirers in England. These lectures are the revision of stenographic reports taken when delivered. Such a course does not pretend to include all the information that could be given on any of the subjects, but it does have the wonderful advantage of impressing upon memory what was heard, or is read. Dr. Brunton is a man of originalities in his own way of impressing a lesson—a truth—so that the reader of these lectures cannot close the pages without at least retaining something of value stated in them. Thus, with reference to bleeding he is inclined to believe that, to a certain extent, it is a form of serum therapeutics; that, as a consequence of bleeding, we get a greatly increased transudation of juice from the tissues into the blood. "By getting these juices from the patient's organs into his blood, we have altered the composition of the circulating fluid, and we are really trying a plan of serum therapeutics." Again, with reference to antipyrin, he remarks that, "Curiously enough, most of the cases of collapse that have been observed from the administration of antipyrin have been in women, during the menstrual period. It would almost seem as if, during this period, there is such a change in the nutrition of the woman's organism that antipyrin and phenacetin seem to act more quickly upon the blood, and to produce methæmaglobin; so it is well to be careful about the administration of these antipyretics in cases where a woman is menstruating." The section on the "Action of

Drugs on the Liver," is alike interesting and instructive; so is the section and diagram illustrating the chemical changes in the stomach during secretion, etc.; so is that on the comminution of food, etc., in which the recent increase of human longevity is attributed to the advances in late years by dentists with reference to the perfection in the fixing of teeth when needed, etc. But it would occupy as many pages simply to enumerate the points made that interest and instruct. Every practitioner who can should get this book, and read every lecture in it. He will be profited.

Care and Feeding of Children. By L. EMMETT HOLT, Professor of Diseases of Children in New York Polyclinic, etc. *Second Edition—Revised and Enlarged.* New York: D. Appleton and Co. 1897. Cloth. 12mo. Pp. 104.

This is a "Catechism for the use of mothers and children's nurses," prepared to meet a commonly felt want. It is a good text-book for classes of nurses being trained for the care of infants and children, and is just such a book as practitioners should recommend to mothers. In fact, it is worthy of the reading by physicians, because it contains many useful suggestions that are not commonly thought of or appreciated. Too little attention is given generally to these matters of practical detail, even in medical colleges; so that the young practitioner often goes into the infant sick room as ignorant of what to advise as to nursing as the anxious but untaught mother. The book is arranged in the form of questions and answers, and is well indexed. The chapter on "Infant Feeding" is especially valuable.

Clinical Methods. By ROBT. HUTCHISON, M. D., M. R. C. P., Demonstrator in Physiology, London Hospital Medical College, and HARRY RAINY, M. A., F. R. C. P., Ed., F. R. S. E., University Tutor in Clinical Medicine, Royal Infirmary, Edinburgh. *With 137 Illustrations and 8 Colored Plates.* Philadelphia: Lea Brothers & Co. Cloth. 12mo. Pp. 552. $3.

This "Guide to the Practical Study of Medicine" bears date in the Preface of September, 1897; hence is up to date. It is not a treatise on medical diagnosis, but is intended rather to provide an answer to the question, "How shall I investigate this case?" It is, in short, a discussion of the meaning of signs and symptoms which enable us to reach the diagnosis. It is a book for the practitioner, or a post-graduate text-book. And yet the simplicity of style, the fulness of description, and the clearly drawn deductions, aided by the well-executed plates and illustrations, make each page easily intelligible to the under-graduate student. Each system or organ of the body is studied with reference to any sign or symptom of disorder or disease. It thus becomes an almost invaluable context with all the more standard books on clinical diagnosis. It fills a place in medical literature peculiarly its own. Special chapters have been added upon the methods of examining children, upon pathological fluids, and clinical bacteriology. The Index, so far as tested, is correct. The book is well worth the price affixed to it—$3. The scheme for the investigation of medical cases is something new, and is a good one for the doctor to adopt.

Editorial.

Yellow Fever and the U. S. Marine Hospital Service.

We ask for a careful reading of the letter of Dr. Warren E. Anderson, of Pensacola, published under the head of "Correspondence" in this issue of the *SemiMonthly.* The same letter, we understand, has appeared in the *Times-Democrat*, and, perhaps, in some other newspapers. But it is of such special interest to the profession of the country that we comply with the request for its re-publication in this journal.

The letter is thoroughly conservative. It properly exonerates the Supervising Surgeon-General of the Marine Hospital Service from any implication. It, however, very forcibly urges objections to the operations of the law establishing that Service as the dictator as to what should be done by its surgeons in times of epidemics. Its text is *yellow fever*, and it directs attention to the fact—too little considered—that, for the most part, surgeons are placed in charge of posts and quarantine stations along the South Atlantic and Gulf coasts who have never seen the disease, and who easily fail to recognize the first cases introduced through our Southern ports. Experts sometimes mistake the first cases of yellow fever; but they see in them enough of resemblance to the dread disease to use prompt precautions for the protection of the country until diagnosis can be clearly made. Too much time is wasted in despatching an officer of the Service who may be familiar with the disease from

the port at which he may be stationed—such as Boston, New York, Philadelphia, Baltimore, Cincinnati, or Chicago—to the point on the Gulf coast where the first suspicious cases may arise. In the meantime, the inexperienced surgeon ol the U. S. Marine Hospital Service at the quarantine station has permitted the introduction of the disease.

Dr. Anderson, with an unanswerable array of facts, points out the necessity for a radical change in the administration of quarantine laws, and advocates the establishment of a National Department of Public Health, which will yield to State or Municipal Boards of Health or other competent authority such powers as are now granted only to the U. S. Marine Hospital Service. There would then be scarcely any curtailment of the rightful powers of this Service—which Service, indeed, would become the more useful in seasons of threatened epidemics as an Assistant to the none competent doctors of the State, city, town, or port, where yellow fever usually finds entrance to the country.

Our purpose in this note is accomplished if we have succeeded in awakening sufficient interest in the subject in general to induce doctors of the United States to carefully read and weigh the arguments given in the communicatiou by Dr. Anderson. It would be in vain for us to attempt to paint the lilly or add a richer fragrance to the rose as presented in that masterly letter. Congress is now in session, and we cannot fear that sectional or party politics will govern that body in an effort, on the part of the profession, to correct an error of the law wbich so seriously affects the health, the lives, the business and commercial iuterests of the people of the United States.

Lindsay & Blakiston's Physicians' Visiting List for 1898,

Has been received. This is the forty-seventh year of its publication, which fact indicates the degree of its popularity. It is published by P. Blakiston, Son & Co., of Philadelphia, and is sold by all booksellers and druggists. There are five forms of the "regular edition"—for 25, 50, 75, 100, and one for 50 patients in two volumes. The prices are $1, $1.25, $2, and $2.25, respectively. There is also a *monthly* edition—plain binding, 75 cents, or in leather, $1. The perpetual edition is bound in red leather—that for 1,300 names, $1.25; that for 2,600 names, $1.50. Pencil, pocket, etc., for each edition. The "dose table" appears to be complete.

Surgeons on Board of Vessels.

In this day, when humanitarians are searching for fields of usefulness, it appears a little strange that they have not directed their attention to the subject referred to in this writing. The most superficial examination will show that the vast majority of river, bay, and even a great number of ocean steamers or vessels conveying passengers—whether for business, health or pleasure—have no such officer on their lists as "the doctor." Packets with officers and crews of fifty—even a hundred—are constantly leaving our ports for distances so far as Australia, China, etc., without a medical man on its roster of officials. Even on land any collection of people so large would be considered remarkably fortunate if, in the length of time required for such trips, no one stood in need of the physician. Railroad passengers in this country—whatever distances may be called for by their tickets—can scarcely find a section where the services of a doctor cannot be secured, within a few hours at most. But when the vessel has cleared the port—whatever may be the need for a doctor—none can be summoned until the port of destination is reached. It needs no argument to convince any one that many an avertible death, or chronic disease, or permament disablement has resulted from the lack of medical or surgical attention at an hour when such service was called for. It is ridiculous nonsense to suppose that the captain or other non-professional official is competent in this day to diagnose or prescribe intelligently for the cure or relief of the vast majority of the diseases which afflict mankind; and no one who appreciates human health or life would be willing to believe that the boat officer—not a doctor—is capable of performing any of many surgical operations that might be required during a voyage. Be he sailor or officer, servant or master, steerage or first cabin passenger, his health and his life are valuable. All that a man hath would he give in exchange for his life.

It was pardonable in days gone by for vessels to be without their surgeons. The supply was not equal to the need. With the rapid development of educational interests during late years, however, such an excuse cannot be urged. Medical colleges all over the civilized world are annually graduating worthy medical men, who, after a few years of experience in dispensaries, hospital service or private practice, are qualified to be made medical officers of such vessels.

So far as American vessels are concerned,

Congress has the power to require such as may seem, in the order of things, to need medical officers, to provide for such service. Government laws lay down conditions as to what certain officers a ship or a steamer shall have. It would be a great advance, at little or no cost to the Government, if Congress were to demand that each vessel carrying a number of human beings—whether as crew or passengers—shall have one or more medical officers aboard.

We do not undertake argument along this line of suggestion. It probably will require time to educate lawmakers on such a subject. But as some such provision as we have referred to seems demanded for public interests and individual comfort, and must, in the near future, be made, we present the matter to our readers for their consideration and action. Humanitarians everywhere should be shown this field for useful legislation. Passengers are necessarily interested. Ocean or long voyage steamer corporations should be made to see it to their interests voluntarily to adopt the measure suggested, in advance of legislation. Medical colleges and their graduates are all interested—if for no other reason than to secure positions for the surplus of doctors, now being annually increased in some sections.

Pollution of the Potomac.

Prof. Arthur Davis, of the Geological Survey, in a paper before the Geographical Society in recent session, spoke of the sources of contamination of the river above Washington. The foul sewage of Cumberland, the water from mines, and waste from manufactories flow into the Potomac. Towns all along the Shenandoah also discharge their sewage into the stream above Washington. Dr. E. K. Sprague gave a history of the bacteriological work of the Marine Hospital. As the result of semi-weekly examinations of the Potomac water since July 1, a varying number from 150 to 20,000 to the drachm of micro-organisms were found—an average of over 64,000 to the ordinary drink. Since August, eighteen intestinal bacteria were found in every sample.

Klemperer's Clinical Diagnosis

Is announced for early publication by the MacMillan Co. It has passed through seven editions in its original language (German) in as many years. Dr. G. Klemperer is Professor at the University of Berlin, and is widely known as a most able diagnostician. Hence we feel that this first American edition will be in great demand.

The Tri-State Medical Association of Western Maryland, Western Pennsylvania, and West Virginia

Met in Cumberland, Md., December 16th. The "program" announced papers by Dr. John B. Deaver, of Philadelphia, (on "Importance of Early Diagnosis in Malignant Disease of the Breast"); by Dr. W. T. Hughes, of Bedford, Pa., (on "Therapeutics as Based on the Study of the Tendencies"); by Dr. E. T. Duke, of Cumberland, Md , (on "Post-Diphtheritic Paralysis"); and by Dr. W. F. Barclay, of Pittsburg, Pa., (on "Medical Literature.") A paper by Dr. Hunter McGuire, Richmond, Va., is also announced, but no title is given. The scientific proceedings occurred between 1:30 and 6 P. M. The evening was devoted to social enjoyment. Dr. W. P. Henry was President, and Drs. Percival Lantz, and F. W. Fochtman, (of Cumberland, Md.,) Secretaries.

The Southwest Virginia Medical Association

Is the name of a new society organized at Norton, Wise county, Va., November 24, 1897. The following officers were chosen: *President*, Dr. A. J. Hoback, Big Stone Gap, Wise county; *Vice-President*, Dr. Moran Stallard, Norton; *Secretary*, Dr. J. B. Harrold, East Stone Gap. The Association will meet at different places. The meeting of December 29th will be in Big Stone Gap, when Dr. G. B. Mabe, of that place, is to read a paper on "Conservatism in Medicine and Surgery," and Dr. H. L. Ashe (who was chairman of the convention for organization) will deliver an address on "Medical Progress." Why the South is not full of like medical societies we do not know. They are useful for the promotion of personal interests, and profitable from a scientific standpoint.

Foreign Edition of the Laryngoscope.

Beginning with the January issue, 1898, Messrs. John Wright & Co., of Bristol, England, will publish a *foreign edition* of the St. Louis *Laryngoscope*. This is believed to be a new departure in the field of American journalism, and a recognition of advances made by the American profession in the specialties represented by this journal. Dr. Frank M. Rumbold and M. A. Goldstein, editors.

Trolley Car Ambulances

Are about to be introduced in the city of Pittsburg, Pa., running independently over all the street-car tracks of the city as called for—so says the *Scientific American*.

Dr. Harold N. Moyer,

The well-known physician and editor of *Medicine*, of Chicago, was held up, shot and severely wounded by highway robbers. The dastardly deed was committed in the early evening on one of the principal streets of Chicago. It was probably a case of mistaken identity by the foot-pads. Dr. Moyer, the Cincinnati *Lancet-Clinic* tells us, always wears good clothes and has the external appearance of being the well fed son of a millionaire, which was no doubt deceiving to the robbers. Resistance to the hold-up caused the shooting, the bullet perforating the doctor's thigh; but fortunately, the wound is not fatal, although it is a bad one, and will disable him for some time.

The Virginia Legislature

Is in session. Drs. Geo. W. Le Cato, of Accomac; Joseph W. Southall, of Amelia, are in the Senate, and Drs. N. H. Neblett, of Lunenburg, and B. L. Winston, of Hanover, are in the House of Delegates. Each of these are valued members of the Medical Society of Virginia, and practitioners of large experience in their respective counties. Dr. Southall has been elected by the Legislature as Superintendent of Public Instruction, to go into office on March 15th, 1898, for the term of four years.

The Philadelphia Medical Journal

Is the title of a new weekly journal, the first issue of which will be in January, 1898. Dr. Geo. M. Gould is to be editor. Three dollars a year. It will be published by a joint stock company having a capital of $30,000. The board of trustees represent some of the ablest men of the profession in Philadelphia. The journal will be conducted solely in the interests of medical science and the medical profession.

The Georgia Journal of Medicine and Surgery

Will hereafter contain from 75 to 100 pages monthly. Drs. Graham, Master, and Fitch are its editors, and are making it a first class journal. They ask especially that mail be addressed for them to 127–129 Liberty street, West, Savannah, Ga., as their journal has been occasionally mistaken for a trade journal published in the same city, issued by the manufacturers of a secret rostrum.

Obituary Record.

Dr. Norman H. Neblett,

Of Whittle's Mills, Lunenburg county, Va., died in Richmond, Va., December 16th. He was born in the same county during 1863. Having graduated from the College of Physicians and Surgeons, Baltimore, in 1884, he entered the practice of medicine in Lunenburg county. He joined the Medical Society of Virginia in 1886. He rose steadily in the profession, and as steadily gained in popularity and influences with the people of his section. In November of this year, he was elected by his countymen as a member of the Virginia House of Delegates. He came to Richmond December 1st, when the General Assembly of Virginia convened, and was beginning to gain inflences in that body when he was stricken down by an attack of appendicitis. The gravity of his symptoms demanded his immediate removal to St. Luke's Hospital, where Dr. Hunter McGuire found it necessary to operate that night.

During the week following the operation, he showed signs of constant improvement, and until afternoon of the 16th, he was chatting with his wife and attendants. Indeed, his physicians had every hope of his speedy recovery. The wound was doing well, and not an untoward symptom had developed until 3 P. M., when, without premonition, he had a severe convulsion, followed by another a short while afterwards, and a third one about 6 P. M., during which he died. Post mortem revealed that there was long-standing kidney disease.

His death causes the loss to his county of a valuable representative in the State Legislature, while the profession has lost an earnest worker in its behalf.

Dr. Neblett married a daughter of Dr. Benj. Haney Hite, of Lunenburg county, Va., who with three children survive. His remains were conveyed to his county, and interred in the family burying ground. He was a member of the Episcopal church near his home.

Bromidia in Italy.

Dr. Luigi Salucci, Physician to the Holy Apostolic Palaces, The Vatican, Rome, under date of September 1, 1897, wrote Battle & Co.: "I have given your bromidia with success as a remedy for insomnia, especially where produced by excessive study or mental work."

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Original Communications.

PNEUMONIA.*

By JOHN HERBERT CLAIBORNE, A. M., M. D.,
Petersburg, Virginia,

Ex-President and Honorary Fellow of the Medical Society of Virginia.

Young Gentlemen,—At the request of your Professor of Practice, I appear before you today, to fill his place, as well as I may be able, and to speak to you on the subject of *Pneumonia.*

What is Pneumonia?—It is a disease, which, from the frequency of its occurrence in this climate, you will often be called upon to treat, when you shall have assumed the practical duties of your profession; and which, from its great gravity, will give you many a day of thoughtfulness and care, and many a night of sleeplessness and anxiety. In mortuary reports, it ranks as the third amongst the diseases contributing to swell the death rate in the greater portion of this country. It behooves you, therefore, to familiarize yourselves with its history, with its habitat, with its nature, with its etiology, with its symptoms, and, above all, with its treatment.

Having been asked, some ten years ago, this question, "What is pneumonia?" I plagiarize from my reply at that time—a reply which I have seen no reason either to modify or change.

The past doctor says that it is "pneumonitis—inflammation of the lung, vesicular, and parenchymatous." (See Sir Thomas Watson—*Practice of Medicine*—a book which, for beauty of style, perspicuity of description, and soundness of thought, has never been surpassed, if equalled, by any similar publication, of any date.)

The present doctor says: "It is a general febrile disease, with local lesion and manifestation, or an acute specific disease of infectious nature."

I refer you for this opinion to Kuhn, to Cohen, to Jurgenson (1872), to the *Dublin Medical Journal* (1874), and to the more recent reports (*United States Sanitary Commission*) of an "Endemic of Pneumonia in the Army Barracks at St. Louis, Mo.," and to many other authorities.

The coming doctor says: "It is a zymotic disease, with its own microbe and bacillus." And to this I may add that the coming doctor has come; and has announced this bacillus or microbe to be the micrococcus lanceolatus, or diplococcus pneumoniæ; and has proclaimed, *ex cathedra*, that pneumonia is always an infectious disease, produced by the presence of this microbe in the lung, setting up acute local inflammation, followed by fever and constitutional disturbance of varying intensity.

Of these three definitions, I leave you to take your choice. But I must add that there is a growing tendency in the profession to accept the last. And not only so, but to accept the theory that every disease has its own peculiar germ, seeking by selection its habitat in some especial organ of the body, exciting its own specific action, capable, under favorable circumstances, of indefinite multiplication; and carrying, with its toxines, infection, wherever it can find a suiting soil. This, when proven, can be published as etiology made easy. But it would not be wise to antedate that day, and to announce that every disease is "catching," until the scientist, in further pursuit of the peccant spore, can safely promise a poison for every specific germ, a phagocyte for every roving microbe. When this shall have been accomplished, then we may advertise treatment, as well as etiology, made easy. We should only and simply diagnose the malady, corner, and catch its microbe, telephone for the official phagocyte, and accept of the grateful acknowledgments of the patient.

But as that halcyon day has not yet come, it behooves us to consider disease as we see it,

* A Lecture delivered by request of the Professor of Practice of Medicine before the Class of the University College of Medicine, Richmond, Va., at 1 P. M., December 20, 1897.

or as we think we see it; and whilst we should not despise or discredit the work of the laboratory, or the microscope; or refuse to open our eyes to the wonderful light which the patient laborers in those departments have thrown upon the dark lines and mysteries of medicine, we must remember that, in buffetting disease, we sail upon tempestuous waters, where the safety of the craft depends more upon the skill and experience and steadiness of the hand upon the tiller than upon the mariner's knowledge of the text of navigation.

No theory, however finely spun, or closely woven, can supplant the lessons taught by experience. We cannot afford to extinguish its light in time of danger, though it may shine only on the course which we have already passed. It has uncovered many a rock which would otherwise have wrecked the unskilled voyager; it has placed a buoy upon many a shoal upon which he would otherwise have foundered.

But accepting any definition, or any etiology of pneumonia, a more pertinent question is—*How would you recognize it?* What symptoms, or series of symptoms, would lead you to suspect that you had encountered a case of pneumonia in your practice? On inquiry of the patient, he would say to you that in the midst of his usual health he had been taken with a chill, of more or less severity, followed by fever; that he had a pain in his right side, beneath the nipple, extending perhaps through to the back; that he had a cough, with the expectoration at first of the ordinary glairy mucus of a simple bronchitis, but that afterwards, in the course of thirty-six or forty eight hours, the sputum had become very viscid—so much so that it adhered to the bottom of the vessel in which it was received so closely that it could not be poured from it; and that it was colored of a brownish character as if stained with bile. Indeed, before the introduction of acoustics into practical medicine, and before Lænnec, and Louis, and others, had taught the method of diagnosing disease by auscultation and percussion, this coloring matter was thought to be bile; and your grandfathers knew pneumonia by the name of "bilious pleurisy." The decubitus of the patient would be on the back, and he would tell you that it increased his pain to lie on either side. His respirations would be hurried and oppressed—the distension of the alæ nasi testifying to the fact. The cheeks, especially the cheek on the affected side, would be flushed and dusky, and the whole facial expression indicate some grave trouble.

So much for the general symptoms. And these would lead you to an examination of the *physical signs* or the signs developed by auscultation and percussion of the chest. If you saw your patient within the first twenty-four hours of the attack, you would find no change on percussion. Auscultation would develop the fact that the air still permeated the lung supposed to be the seat of the disease; but the respiration would be harsh and puerile over the affected area. This is the *first stage*, or the "stage of irritation;" and in this instance, as in all others, the first effect of the irritation will be to suspend secretion. There is now no effusion into the lung, and hence we might call this the "dry stage." This stage is not noted by most of authors, perhaps from the fact that the patient is not seen often in the very inception of an attack.

When the irritation has passed into inflammation, then the secretions will have recurred, changed of course in character, as in all cases of inflammation, and now the *stage of inflammatory engorgement* begins—the stage which your text-books teach you to be the first stage of pneumonia On percussion now, you will find a well-marked dullness over the engorged area of the affected lung, which is generally the lower and middle lobe. Auscultation will now give you the same harsh and puerile respiration in the upper lobe of the lung that you heard at your first examination throughout the whole lung. But in the middle and lower lobe you will also hear a peculiar crackling or crepitation, *pathognomonic of pneumonia*, and which you will hear in no other disease. This is "the crepitant rhonchus of Lænnec," and proceeds from the minutest ramifications of the minutest bronchial tubes, as well as from the vesicles themselves, and is probably the result of the passage of the inspired air through the effused fluid and "the formation and bursting of little air bubbles." This was the explanation given to the phenomenon by Lænnec, who was the first to note and to name it.

Lænnec likened this peculiar crackling sound to the noise made by the rumpling of very fine parchment. Others have likened it to the crackling of salt when thrown upon coals of fire; and others to the noise made by the rubbing of hair between the forefinger and thumb near the ear. But none of these sounds give a counterpart of the peculiar crackling râle of pneumonia. You must hear this sound to recognize it; and when you have once heard it, you will never thereafter fail to recognize it.

But this peculiar and pathognomonic sound is heard only within the first three days of an attack of pneumonia. In the progress of the

morbid processes, the minute bronchial tubes, the vesicles, and the parenchymatous tissue, all become filled with effused matter, and there is no entrance of air into the affected lung at all, or rather into the affected portion of it. You will hear the same puerile respiration in the upper and unaffected portion of the organ, but you will have no sound from the diseased area. The lung is now said to be hepatized; and this is the *second stage*, or the "stage of red hepatization," or solidification. This stage usually continues from four to five days. Auscultation will of course give you no sound, but percussion will give absolute flatness over the whole diseased area, whilst above this you will hear harsh, puerile, high-pitched breathing in the bronchial tubes, and what is called vocal fremitus. Inspection will show you a decided enlargement of the affected side, and abdominal breathing.

The general symptoms will show more decided discomfort than during the first stage; and if there should be, as unfortunately there often is, some inflammation of the pleura, the patient will complain of more pain, his temperature will range from 102° to 105°, his respiration from 40 to 50 per minute; and his expectoration, not now so viscid, will present a darker appearance, and has not been inaptly likened to prune juice.

And now, if under your skilled attention, or under the Providence of God, the patient makes a successful resistance to the disease, the *third stage* supervenes, the "stage of grey hepatization," or resolution.

In this stage, should convalescence be established, all of the phenomena which characterized the local invasion of the disease will recur in reverse order of attack; and auscultation and percussion will give you the returning râles, and returning resonance, until the restored lung assumes its normal function. This will require from a week to ten days, depending, to some extent, upon the gravity of the attack and the age and vigor of the patient. The termination of an attack is sometimes announced by what is called a crisis—that is, the temperature will fall to 100° or less, the respiration will become slower and easier, a full diaphoresis, perhaps a profuse diuresis, will occur, the patient will fall into a profound sleep, and convalescence be established with great rapidity. But this, I regret to say, is not the rule.

The prognosis of pneumonia, as I indicated to you in the commencement of these remarks, is exceedingly grave. The mortality ranges from 20 to 30 per cent. In the very young, and in the very old, and in those enfeebled by intemperance, or by any depressing influences, physical or moral, we may even expect a greater mortality. Indeed, we are often surprised and discouraged to see the young and vigorous succumbing to an attack which seemed, in its inception, to be a very simple case. The prognosis increases in gravity with the amount of lung involved. Double pneumonia is almost always fatal. Death is said to occur generally from heart failure—a fashionable cover for much uncertain knowledge. Probably the right ventricle does often become clogged with coagula, and with fibrinous deposits, some of which, finding their way into the general circulation, embarrass, and finally obstruct it.

And now, gentlemen, if you have followed the recital of the symptoms, which I have endeavored to set before you, you will have but little difficulty in your *diagnosis of pneumonia.* Remember that your patient will be taken with a chill, more or less marked, and almost invariably; that this will be followed by an exacerbation of fever; that the temperature will be from 102° to 105°, respirations from 25 to 30, pulse from 100 to 120, though the pulse is not always as rapid, even in grave cases, as we might expect to find it; that there will be a dusky red cheek, especially on the affected side; that there will be pain under the right nipple, of more or less intensity; that the decubitus will be on the back, and the expression of countenance anxious and troubled. The cough, or the pathognomonic sputa, may not yet have appeared; the physical signs, except the dryness of irritation, may not have developed; *but on the second day* you will recognize both, and your diagnosis will be established. There is no other disease which you can mistake for it; that is, for a plain, typical case of pneumonia. You may meet with cases said to be latent; that is, with cases in which the general symptoms are masked, or where the case is complicated with pleurisy, or concurrent with typhoid fever, or with some one of the exanthemata, as measles or small-pox; but the physical signs will never deceive you, and they will teach you to detect it, under any circumstances.

But having made your diagnosis, having convinced yourself that your patient has pneumonia, a more important question than any which you have yet considered will confront you—viz.: *What will you do with it?*

You may accept any etiology which you please, you may regard it as a specific, infectious disease, self-limited and terminating by crisis, or by lysis, on a periodic day; or you may call it a zymotic disease, with its peculiar

microbe, as Klebs has done; but the fact will be patent and indisputable, that *pneumonia is pneumonitis*—an inflammation of the lung—and, as practical men, you must determine whether you will stand by with hands off, and with ptisans, and placebos, watch the phenomena of this inflammation under nature's course, or adopt the regimen, and remedies with which other inflammations have been treated and cured.

You have seen an inflamed eye part with its "pain, redness and swelling;"—in other words, with its inflammation—under the local and constitutional treatment practiced by your distinguished Professor of Ophthalmology in this University.. You have seen an acute dermatitis yield to the appropriate treatment prescribed by the skillful dermatologist, who presides over the department of skin diseases in this University. And I instance these examples of inflammation because they were open to your sight. You saw inflammation of the eye cured, and you saw inflammation of the skin cured. Why, then, cannot inflammation elsewhere in the human body be cured? Why cannot an inflammation of the lung be cured? —a pneumonia?

It can be cured. How? Not by any one specific remedy or specific treatment, equally adapted to all cases, and promising an invariably fortuitous issue. But, under appropriate treatment, an inflammation of the lung need not run through its regular stages. It can be jugulated, or cut short before the stage of resolution. And, in certain active acute cases of sthenic character, unless the disease is cut short before the third stage, or stage of resolution, your patient will pass into an earlier stage of dissolution. But each case of pneumonia must be a study of itself, as well as a law unto itself.

It is proper that you should keep your pathology before you, in every case, and to remember that in every case you have a choked lung, and an overloaded heart—right heart; and to remember that you must open the one and unload the other. In a mild case of pneumonia, with pulse and temperature ranging only a little over normal, with respiration about equally affected, with placid face and no discomfort, you may call in Nature, the doctor's great handmaiden, and leave the case to her management. The rest, and warmth, and quiet of bed, a fluid, but nutritious diet, as milk or malted milk, beef tea, etc., with a soothing expectorant, should a cough develop or harass, and your patient would soon convalesce. This is known as the *expectant plan of treatment.*

But suppose that you were called to a robust and vigorous man with pneumonia, in first or second stage of the disease, and find him with flushed face, hurried respirations, 30 to 40 a minute, temperature under the tongue 103° to 105°, a full bounding pulse, pumping with a forty-horse power a scarcely fluid fibrin through a choked lung 120 times a minute, what would you do? Give him a ptisan and beef tea? I would not. And I know nothing which would so soon, and so certainly fill the indications in such an instance as the lancet—venesection, *pleno rivo;* not by the ounce, or by measurement, but until the softened pulse, the pallid face, and the easy respiration showed that heart and lung were both relieved. A recent book on Practice, an excellent one, by Dr. Tyson, of Philadelphia, says that this is an "old-fashioned, and unorthodox practice"; but I am glad to see that he endorses it. Reject nothing, young gentlemen, because it is old; adopt nothing simply because it is new. I hold up before you an old thumb-lancet case which I have carried for more than forty years. It always has in it a bright new lancet, and I use it, not so often as I formerly did, but I use it still, and I have never yet used it to repentance or regret.

Many medical men use, in such cases as I have recited, instead of the lancet, the tincture of veratrum viride, 10 drops every one, two or three hours, until they have reduced the pulse and slowed up the circulation, claiming thus to bleed the patient into his own veins. I have a great respect for some of the authorities who commend this course, but to me it has never proven satisfactory.

But by far the greater number of cases of pneumonia which you will be called to treat will not present so sthenic a character, or you will be called too late in the attack to demand so vigorous a treatment as the lancet, or veratrum viride. The majority of cases you will rarely see before the second day, and you will find neither the respiration nor circulation so hurried; but in which there will be much pain and discomfort, and the secretions will be scanty or suppressed, and the patient restless. In such cases you will find that mercury, in combination with a sedative, will fill the indications of treatment. Three grains of calomel, two of Dover's powder, two of James' powder, and one drop of tincture of the root of aconite, administered in pill or capsule, every three or four hours, will fill the indications, and give relief before half dozen doses are given. The sputa will become more abundant, and less viscid; the bowels will be emptied of several dark bilious operations; the patient will become

quiet, and express himself as better. Then you may follow up this with the local treatment of cupping, wet or dry, according to the dynamic condition of the patient; and envelop the patient, at least on the affected side, with cotton wool, which you can retain in place by an oil silk jacket, thus begetting and retaining a moist heat, with the soothing effects of a warm poultice.

If the case prove refractory, and the third stage be deferred, or the resolution slow and unsatisfactory, then a fly blister, six by eight, to the affected side, under the nipple, will prove an excellent adjuvant to the other treatment. By this time also it is probable that an expectorant may be indicated, and you can give a tablespoonful of the comp. liquorice mixture, the old Brown mixture of the Dispensatory, every few hours with four or five grains of muriate of ammonia, or of carbonate of ammonia, if the patient be very feeble. And, alternating with this whiskey, in water or milk, half ounce, ounce or more, according to effect, is a most timely remedy. And if the heart seem very weak, you may give strychnia hypodermically, one-thirtieth of a grain, two or three times, in twenty-four hours.

But there is *another grade of pneumonia*, to which you will occasionally be summoned, adynamic in its character, sudden of attack, and rapid in its course, known as *typhoid pneumonia*. You gentlemen who will be called to practice your profession in especially malarious districts, will more often encounter this. You will observe that your patient passes from the cold stage, in which the chill is apt to be most marked, into an imperfect reaction. His respiration will be very hurried and oppressed, his heart's action feeble, and perhaps irregular, whilst the anxious look with which he receives you will warn you at once that the citadel of life is being assailed. Expectoration comes with reaction—not the viscid, oak-leaf sputa which you have seen in other instances, but a profuse, thin, frothy prune-juice looking fluid. Here we have no grading off into second or third stages; nor does the patient wait until the seventh or eighth day to die *secundem artem*. The lung, or lungs—for this kind of pneumonia is usually double—soon fill from the intensely engorged pulmonaries; the nervous system succumbs as if from shock; restlessness, jactitation and delirium ensue, and death closes the scene in less than three days.

In such cases, of course, you will require no blood-letting, no antimony, no veratrum, no ipecac, no depressants or antipyretics of any sort. Locally you will apply sinapisms to the chest, posteriorly and anteriorly; and internally you will give quinine and opium, three grains of the former and half grain of the latter every three hours, alternating with whiskey, half ounce, one ounce, two ounces—any amount, without regard to quantity, until the dynamic forces have been re-established. After that, you can exhibit carbonate of ammonia, and syrup of senega in gum arabic mixture, as the symptoms may indicate, *not forgetting the whiskey*. In these cases of pneumonia, I know of nothing which can take the place of whiskey.

Such, young gentlemen, are the remedies which I have found most efficacious in a personal experience of more than forty years, in treating this dangerous and treacherous malady. And I must confess, after all of these long years, that I approach each case now, uncertain as what my course of action will be, until I have carefully studied it individually and closely, and with no disposition to thumb authorities. I always feel that I am meeting an enemy on his own ground, and without any supports or reserves behind me. And if I fight with more courage now—a courage begotten of often combat—I still fight warily, and with great caution, lest, unhappily, the patient die of the doctor, and not of the disease.

This plan of treatment, as I have said to you, I have deduced from my own observation and experience. Other physicians, equally careful, equally competent, and equally conscientious, have drawn different conclusions. The art of medicine has not yet been formulated into an exact science. Doctors will differ. Hear them all, patiently, attentively, impartially, and then exercise your best gifts in determining whom to follow. The wonderful resources that organic chemistry is daily adding to your armamentaria, the marvellous light that the microscope is throwing upon the hitherto dark problems of pathology, will furnish you with opportunities of which your masters had no conception. Grasp them with all your vigor and with all the enthusiasm of humanity, and soon it may be given to you to stand upon a pedestal to which they could never have climbed, and to announce to the world from its summit, *vestigia nullius magistra sequor*. I follow the footsteps of no master; I lead, I lead in that immortal contest, *e mache athanatos*, which has been so long waging between truth and error, between light and darkness, between life and death; and to day, to-day, I am the victor.

But it becomes me, young gentlemen, as a teacher, to speak to you of some of the rem-

edies recommended, and of some of the plans pursued by other practitioners of medicine who occupy, and justly so, positions more distinguished than my own.

Some medical men claiming that the disease is self-limited always, and requiring no treatment, no active interference, rely exclusively on diet and regimen. Dr. Bennet, of the Royal Infirmary of Edinburgh, reported, a few years ago, 105 cases treated in that manner without any interference, and all recovered. I have never heard of any other physician in any other country, with any other treatment, attaining the same success. It may teach you, however, this lesson, viz.: that when you are uncertain in any case what course to pursue, to do nothing is not always unwise. The resources of nature are wonderful, and she will sometimes prove your safest consultant.

Dr. H. A. Hare, of Philadelphia, after discussing the question whether it is possible to abort or regulate a case of pneumonia, says that, "after exudation has taken place, his three sheet anchors are digitalis, strychnine, and belladonna," and that he "scarcely knows which to place first."

Professor Kerr protests against the indiscriminate use of digitalis, and counsels that, when used to strengthen a weak heart, it should always be with the simultaneous administration of strychnine.

Dr. Porteus, of Yonkers, after remarking that the tendency of the disease is to resolution, and not to dissolution, adds that the drugs to which he "pins his faith are digitalis, chloral, and ammonia."

Crombie gave four grains of chloride of calcium every four hours, and says that "the uniformity of the apparent response to the treatment, encouraged him to urge for it adequate trial." Moir used the same drug in much larger doses, and says that he was satisfied with the results."

"Ice cradleing," or the application of ice to the chest, was treated in the Aberdeen Royal Infirmary some two or three years ago; but the reports were of a "negative character"—a mild conclusion to rather a heroic remedy. Dr. Jackson, of Ontario, reports excellent effects from a routine treatment of the application of cold compresses to the chest, and says that "the lowering of the bodily temperature, the quieting of the circulation, the relief of pain, and the general bodily comfort promoted by the application of cold water compresses. when once observed, will carry conviction to the most incredulous person." Dr. Baruch, of New York, commends the same treatment. So does Dr. Mays, of Philadelphia. Dr. Mays reports a death-rate of only 2.7 per cent. in a group of cases numbering seventy-four in which the cold compresses had been tried, and claims that this treatment is ten times better than any other. But Dr. Bennet still leads him on to the do-nothing plan, for he reports no death in 105 cases treated by expectancy. If you propose to formulate your practice on results obtained from statistics, you could do no better than follow the course taught by either of these gentlemen. But unfortunately, statistics are not always as reliable as the Gospel.

Dr. Gundrum expresses himself in general terms as in favor of the cold water treatment, and says that it is "the only agent that will abstract heat, and at the same time innervate the nervous system and increase the dynamic force of the respiratory and cardiac motor centres."

Dr. Douglas Powell says that the pyrexia of pneumonia is normal to the disease, even to 104 degrees; and that, as high temperatures are unfavorable to the development of the germ, no drug, which may have a tendency to reduce this temperature, should be administered." This theory would be fatal to the exhibition of antipyretics in any zymotic disease—any disease produced or propagated by microbes. And as fever has been thought by some to be nature's method of killing and casting out of the body the *materies morbi*, this is a pertinent enquiry, which I commend to your attention, viz.: How far we should go in the administration of antipyretics in our efforts to reduce temperature? This theory established, would sound the death-knell of antikamnia, antipyrin, antifebrin, and of all the coal tar series, as far as their administration in febrile conditions is concerned. They are all antipyretics of undoubted and constant effect, but they are also all, when administered alone, depressants of the circulation. In pneumonia I have rarely seen them used. They have their place in therapeutics, but not as remedies in the treatment of pneumonia, and in any disease they will bear watching.

Jurgenson, as reported and rather endorsed by Bartholow, advises the local application of cold by "exposing the body of the patient, naked, to the cold air." I would recommend to any of you gentlemen, who propose trying this treatment on a patient, to put yourself in his place.

And finally, the serum treatment has been recommended, of course. And it would seem that pneumonia was the first disease in which this treatment first engaged attention. The

Klemperer brothers used an antitoxin which they derived from the blood of animals in which they had injected cultures of the pneumococcus. They also injected into persons ill with pneumonia, the blood serum from others convalescent from that disease, and they claimed good results. This is a treatment which merits honest consideration. In the new great field of serum-therapy, there is a promise of rich harvest to earnest, honest, and skillful laborers. I commend this branch of therapeutics to your most earnest consideration.

32 *Union Street.*

PUERPERAL INFECTION.*

By ST. JOSEPH B. GRAHAM, M. D., Savannah, Ga.

The causes of puerperal infection can be classified as follows: Streptococcus pyogenes (usual cause); staphylococcus pyogenes aureus and albus; Klebs-Löffler bacillus of diphtheria; bacillus coli communis; gonococcus of Niesser, and, perhps, the bacillus of malignant œdema (vibrion septique Pasteur).

The manner of introduction of the micro-organisms is two-fold: Either from the patients or their dressings, or, more usual, from hands, instruments or dressings of physician or nurse.

Infection from patients themselves may be illustrated by the role played in the birth of dead and macerated fœti, retained placentæ, accessory growths of the placenta, and spurious placenta, all of which furnish favorable soil for the growth and multiplication of micro-organisms.

In order to have puerperal infection, micro-organisms must be present; they gain admission either through a solution of continuity, or through the puerperal endometrium. The virulence of these organisms varies much, due to difference in temperature, source and growth. The infection varies with the condition, as well as the number of microbes present, and the individual susceptibility of the patient.

The pathology of puerperal infection depends upon the species of organism producing the infection. Ordinarily, infection is due to streptococcus pyogenes, and the most easily noted change is in the blood, even before, but especially after death. It is thick and black, acid in reaction, and decomposes quickly. Streptococci are found in it at times in large numbers, as well as in the organs and tissues of the body. Leucocytes and red corpuscles are disintegrated, partly by the organisms themselves, as also by the toxine elaborated by them. In consequence of this change in the blood and blood vessels, numerous hemorrhagic foci take place in the internal organs. In the intestines, we may find enteritis or ileo-colitis; in the heart, pericarditis, endo-carditis; in the kidneys, acute inflammatory catarrhal condition; in the uterus, metritis; in the veins, plebitis. Changes in the internal organs are not, however, constant. When the infection is mixed, we have a pyæmic condition; then metastatic abscesses occur in different tissues and organs.

TREATMENT—*Preventive.*—Begin prophylaxis when we see any indication for the same. Any condition or disease, local or constitutional, that lowers vitality, or furnishes a nidus for bacteria, predisposes to infection, and we may include auto-intoxication in the list. These should be met by proper measures. Any abnormal secretion from the vagina calls for treatment. Leucorrhea is often due solely to systemic disturbance, which resists local treatment, but is readily cured when the real cause is recognized. Chronic malarial toxæmia readily yields to proper doses of iron, quinine and arsenic. If gonorrhœa is present, treatment will at once be resorted to. In health, the vagina secretes a mucus and cultivates saphrophytic bacilli, which render it immune to the invasion and harmful influences of pathogenic bacteria; hence, in health preliminary antiseptic douches are not only uncalled for, but are harmful, in that they upset the provisions of nature.

As an antiseptic for the hands, the writer prefers a 2 or 3 per cent. solution of formalin (a 40 per cent. solution of formaldehyde), gained by the incomplete oxidation of methyl alcohol dissolved in water. The nails are first well cleaned. No matter how clean they may appear, a new or sterilized nail-brush and sand-soap should be used for the fingers, hands and arms, afterwards washed in alcohol and thoroughly washed and soaked in the formalin solution. Nothing unsterilized should be touched after the cleansing. A sterilized gown should be worn by physician and nurse. Everything should be gotten in readiness beforehand. [The writer showed a little sterilizer for instruments, of his own evolution, which is compact, cheap, easy to transport and fulfils the purpose for which it is intended.] With the small alcohol stoves, water will boil in five minutes; a 2 per cent. soda solution may be used, and

* Read before the Clinical Society of St. James Dispensary. Savannah, Ga., December 4, 1897. [For *Discussion*, see *Proceedings of Societies, etc.*, page 580.]

formalin may be added if desired. Make as few vaginal examinations as possible, and wash the hands in formalin solution after each examination, and when a lubricant is needed use sterilized cotton-seed oil or vaseline.

The writer served a few years in the frontier service as physician, at a post among the Sioux Indians, and noted the extreme rarity of puerperal infection among them—despite the filth and unhygienic surroundings of puerperal women. They never permit the introduction of the finger for examination or the hand for aid, except in the most extreme cases, and these cases were of such a nature that death frequently came before delivery. In the few cases of infection, the wauseca pejutawicasa [the white medicine man] had been in attendance.

The external genitals should be thoroughly scrubbed. Most patients do not neglect their body bath. Where they do, it is well to remind them of its usefulness, aside from common cleanliness. The woman in and after labor should be treated with the same regard for asepticism and surgical cleanliness as in most extensive operation wound.

Unless the hand has been in the uterus, which is to be avoided, if possible, by resorting to Créde's method of expression, the writer would not resort to intra-uterine douches. When labor and the soft parts are normal and the rules of asepticism have been rigidly adhered to, vaginal douches can do no good.

The treatment of infection should be local and constitutional, surgical and medical, influenced by the variety of micro-organism producing the condition. The parts should be examined as far as possible by the eye to determine the focus, and, in a measure, the classification of infection; and upon the information thus gained the treatment will depend. *For local disinfection*, the writer prefers a 1 to 4 per cent. solution of formalin to any other antiseptic known. Where the point of infection is in the uterus, it must be decided whether it is sapræmic or septicæmic. Cleaning out is indicated; the surgically clean finger, dull or sharp curette may be used (each has its advocates and disadvantages), followed by prolonged douching with or without active germicidal agents. Here again the writer prefers formalin solution. It is non-toxic, very slightly irritating in proper strength, and as far as germicidal properties are concerned, heads the list. If remains of necrosed tissue are not present, curetting will accomplish nothing.

If the case is seen early, before septic absorption and migration of bacteria has taken place to any great extent, the writer prefers to use a blunt dilator and irrigator combined. This, after sterilization, is introduced and opened, the irrigating portion having been filled with liquid to prevent introduction of air. It is attached to an irrigating bottle or funnel and a solution of formalin allowed to flow in, while the dilator is moved in every possible direction. This flow may be maintained as long as desired, being careful not to have the solution too strong, nor the hydrostatic pressure too great by too high an elevation of the container. The temperature should guide as to the length of time and value of the washing out. Formaldehyde or iodoform gauze may be used to induce drainage and act as germicidal agents, or as iodoform does to prevent the formation of toxines.

A method which has suggested itself to the writer, but which as yet an opportunity has not offered for use, is the conveying of formaldehyde gas combined with vapor of alcohol into the uterine cavity through a suitable uterine tube applicator. Theoretically, it should prove of great value; practically, we do not know what it will do; at any rate, it is non-toxic. Steam at 100° to 115°C. has been used in this manner with reported good results.

The constitutional treatment is modified in a measure by the kind of infection present. If due to Klebs-Löffler bacilli, anti-diphtheritic serum should be used. If, as more often happens, the pseudo membranous angina and the poisoning are due to streptococcus pyogenes, anti-streptococcus serum is indicated—that of Marmorek probably being the most noted, but many serums made in our own country are as good. Ten cases are reported of streptococcus phlegmon where the swelling of lymphangitis and lymphadenitis quickly disappeared after the use of serum.* The serum treatment, however, seems not to have yet reached that high grade of healing power to which it is thought it will later rise.

The indications are to sustain by proper remedial agents and stimulants, judiciously employed, the patient's vitality until the *vis medicatrix naturæ* sufficiently asserts itself. The writer believes in pushing alcoholic stimulants.

With the *report of a case*, I close my remarks. Patient, age 39, delivered at full term of twins, dead three or four weeks in utero, and attached to one placenta, which came away entire; no laceration of uterus or soft parts. Next day, lochia, apparently normal. On fourth day, at 6 A. M., severe chill followed by temperature of 105°; pulse, 148; stupor. Used dilator as

* Diendonne. Schutzimpfung und Serum Therapie. Leipsic, 1895.

above described and irrigated with formalin solution for one hour. A few small shreds came away, but nothing else. Temperature sank to 103° in the afternoon, when irrigation was again resorted to. Temperature at 9 P. M., 102°. Irrigation again next day; temperature 102°, in afternoon 101°; irrigation. Temperature at 9 P. M., 100°. Morning, irrigation; temperature 100.5°; afternoon temperature, 100.8°. Irrigation; night temperature normal. Irrigation next morning. Patient bright, appetite returning, and went on to recovery. Blood examination showed no plasmodii, but excess of leucocytes. Calomel in small doses and quinine were given internally.

CILIATED CELLS--THEIR IMPORTANCE, ESPECIALLY IN RESPIRATORY TUBES.*

By W. R. AYLETT, M. D., Newport News, Va.

Formerly Resident Physician to Eastern State Hospital, Virginia, and Memorial Hospital, Orange, New Jersey.

In this day of preventive medicine, when pathologists are studying defensive proteids, and bacteriologists are searching for anti toxines to prevent the growth or neutralize the poisons of pathogenic organisms, it seems to the writer that the prophylactic agents of nature, the handmaid of the physician, have been given little credit for work well done. Indeed, when we consider the wholesale work of these agents, we are forced to admit that they have relatively little cause for artificial aid. In this reference may be embraced the stomach, with its more or less germicidal juices; the leucocyte, and others; but it is intended more especially for the ciliated epithelial cells.

The trachea and its ramifications are treated somewhat shabbily by physiologists and pathologists. The first class will state that the trachea is a tube for the ingress and egress of air, and is lined with ciliated cells that raise mucus, dust, and other substances from the lungs; the latter class will describe with all the skill of a historian the fierce wars between the leucocytes and hostile germs, and will even illustrate his description with drawings of the triumphant germs, and the victorious, the self-satisfied, rotund and microbe-containing-leucocytes. But who gives an account or illustrates the fiercer battles of the ciliated cells?

The trachea, in addition to its work as a respiratory organ, acts as a sewer of no small importance. And where else will we find a sewer worked on the same principles? Man bridles gravity and compels it to work his sewerage systems; nature defies gravity, uses the same pipe for several purposes, and yet has a perfect system.

The cilia are crippled and weakened by several causes and conditions. Their motion is more or less impaired by heat, cold, strong acids and alkalies, electricity, chloroform, ether, opium, and possibly by the ptomaines of some germs.

As an example of the motive power of these cells, try the following experiment: Take a frog on a hot summer day, prop his mouth open with a small stick, sprinkle in some cork dust, and then hold him up by his hindlegs. The cork will climb upward until it disappears from view. (The mouth and throat of frogs are lined with ciliæ that work toward the stomach, thus aiding in swallowing small insects, etc.) Now, take the same frog, place him in ice-water, and let him be chilled through and through, and repeat the experiment. The result will be that little or no movement of the cork will be observed.

By cessation of the functions of these cells, death would result in many instances, with much greater rapidity than by the stoppage of any other emunctory of the body.

How often, after exposure to cold, thereby causing more or less disturbance of ciliary movement, do we see pneumonia develop? How often is bronchitis followed by pneumonia, because the ciliated cells are exfoliated in large numbers, and the hostile germs, instead of being literally kicked out of the lungs, find fruitful soil in the congested mucous membrane? How often is the sot picked out of the street and carried to a hospital, where he is found to be suffering with pneumonia, because cold, the drunkard's bronchitis, and alcohol (?) have literally ruined the motive power of his cilia?

The writer has never seen statistics on this head, but in his experience with such cases double pneumonia is frequent, and most always fatal, produced, perhaps, by the favorable conditions for entrance and absorption of large numbers of germs.

How often has the physician stood by the bedside of a very young child with catarrhal pneumonia, or only simple bronchitis, and seen it drowned in its own secretions, because of the opium in some patent cough syrup, or, in some instances, due to his own ignorance or carelessness—the cilia of infants being especially susceptible to opiates?

* Read before the Newport News Medical Society, December, 1897.

Is it not possible that the pneumonia that sometimes follows the prolonged administration of a general anæsthetic may be due to the complete paralysis of the cilia, thus allowing the diplococcus pneumoniæ to reach the very alveoli of the lungs? Perhaps it may be well to add that this germ is found in a large per cent. of healthy mouths.

How often do we hear the victims of other diseases say that they were thoroughly chilled, or "caught cold" on such and such a day?

The leucocyte has well been described as an armed soldier, ever on the lookout for stray enemies, but what a life of ease and comfort compared to that of the ciliated cell! Let these cells pause for even a short while, and we would be afflicted with some deadly disease or drowned in our own secretions. All honor to the little soldier who, from the moment of his birth, falls into ranks and offers a hand-to-hand conflict with myriads of foes. The respiratory tract may well be called the Thermopolis of our existence; and being invaded at every inspiration, nature did well to put in the front ranks, not leucocytes, but Spartans.

219 *Twenty Sixth Street.*

Correspondence.

How to Elevate the Profession in the Country.

Mr. Editor:—The subject of this letter suggests that the Profession "is down" in the country, to the serious detriment of both physicians and people. I speak definitely of the state of affairs in North Georgia and East Tennessee; and I presume it is the same in most country places.

As to the customary *fees charged for medical services in my section*, they are, as merchants say, "below cost." For instance, the fee expected for attention during the full period required in an obstetric case is only $5, and other practice is done at about the same proportionate charge. Such charges apply to distances anywhere from two to six or eight miles away from the doctor's home. Talk about a physician preparing himself, by diligent study of books and journals, and providing himself with the instruments and appliances necessary to deliver a woman instrumentally and aseptically, and then keeping his eye daily on the case till all danger of sapræmia or septicæmia is over, for a total fee of only $5!

In addition, country doctors' fees are peculiarly hard to collect; and he may well count himself fortunate if he succeeds in collecting one-half, even one-third the amount of his customary charges. But with such fee bills as have become established in the country, he must be an exceedingly busy practitioner, and lucky as to the short distances he has to go on horseback, if he is able to book as much as $2,000 a year. Now, deduct one-half or two-thirds, as not worth a cent, from the *amount booked*, and then see how little the overworked country doctor gets during the year—generally about $650; rarely $1,000.

But even these amounts are not all cash. We have to take payment in what we can get—it may be, in part, in pigs, or chickens, or eggs, or butter; in grain or cotton, which we have to sell, and on which pay commission of 5 to 10 per cent. to a merchant for selling for us. It may be the pig dies, the chickens are killed by mink, cat or dog, the eggs broken, the grain moulded and the cotton injured before there is an opportunity to turn such things into cash; so that, of course, all this results in a "dead loss," and this presumed marketable value has also to be deducted from the calculated *cash received.* No one becomes more impressed with the truth of the saying, that "things are not what they seem," than does the country doctor who has to take a large part of his receipts "in kind."

You may give a doctor an unlimited amount of territory in our section, and he may be ever so popular with the people, and have as large a practice as it is possible for one man to attend to; but after he has practiced forty years at such fees as referred to, he will be just forty years behind the times. One of our best county doctors, after practising with us some fifteen or twenty years, went to a Northern city and took a "post-graduate," or "polyclinic" course; and when he returned he said a country doctor does not realize how far he is "out of date" until he goes where he can brush up. So you see that the best of us country doctors, where fees are as they are in my section, are scarcely more than a sore one-eyed man leading the blind. I venture to say that there are physicians practising in my territory, and around it, for years past who cannot give the correct physiological action of a single drug they use. What would you city doctors think of a doctor that would undertake to perform a craniotomy or a supra-pubic with a pocket-knife and a pair of rusty scissors, and then sew up with home-spun cotton thread or string? And yet many of us country doctors have to undertake such

operations with such instruments and material, or let the patient die without an effort to save life—simply because we cannot collect enough money to equip ourselves with the proper armamentarium of the physician or surgeon. And yet, strange to relate, we sometimes have good results.

Now, how are we to remedy this bad state of affairs? Some might suggest that patients demanding such operations should be sent to city hospitals, where it is supposed every convenience and appliance is suited to an aseptic operation. But how can you send them when they won't pay, if they could, the doctor at home? Such people, of course, "God and the doctor they alike adore, Just on the brink of danger—*not before.*" If they die, the doctor is abused by the family for this, that or the other thing done or undone—without ever a consideration that nothing had been done by them to so equip or provide the doctor with means to enable him to do more modern or scientific service. If, perchance, the patients recover, they forget their adoration of the doctor during their illness, and, while willing enough still to speak of him kindly, they cannot be made to appreciate the fact that if they want a truly capable, up-to-date, well-equipped doctor in their neighborhood, they must pay him well enough to enable him to be such.

Some one may suggest as a remedy that the doctors should work up and read up, and control all the practice. That won't do, for some of us get all the practice we can attend to, and yet fare no better. So that it is not an overcrowded profession with us. Granting (what I don't believe), that we could do better with one-half the number of physicians stricken from the list of the country practitioners, suppose a lady over the way is confined, and there is urgent demand for professional help. The doctor is sent for; he is at the far end of his territory, with a case he cannot leave. Another doctor is sent for, and some time is spent in finding him. When he arrives at the bedside the critical moment for skilled assistance is passed, and the patient dies. Would the result have been different if there had been a doctor at every cross road, if he had not the means to supply himself with the proper instruments and appliances with which to manage the case?

The only remedy I can suggest is to demand larger fees, and require their payment. But how are we to get at this? Shall we argue with the people to stop paying so much to build churches and to salary preachers, so that they may have more with which to pay their debts to doctors? No, that won't do—they would stop off our bread at once. Again, the opposite course won't do, for we have seen some doctors *appear* very religious and pray a great deal *in public*, or in the hearing of patients and their friends; but we have not seen that that class get on any better than the other. Too often this self-administered prescription of prayer of such doctors has ignorance for its basis, while hypocrisy is put in as an aromatic to make the prescription seem palatable with an over-credulous public. Yet there are a great many people upon whom such a prescription does not act well, and others care nothing about such cant.

The real remedy consists in a better education of farmers, planters and laborers as to the progress of medical science. They should be taught that skilled physicians are as helpless to do good, under many circumstances, without equipments, as is the well-drilled soldier without rifle or cannon; that these things are expensive, and cannot be provided unless they amply pay the doctor; that doing this redounds to their own benefit—to the preservation of health, and oftentimes to the saving of life itself. If the leading men of the profession would talk this subject up through medical journals and public prints, and in national, State and county medical associations; and if they would try to place the doctor, by legislative enactments, as a preferred creditor, for plain and obvious reasons, they would do a great deal to lift a worthy profession to a level of usefulness—especially to the citizens of country districts. With such help, we country doctors could soon bring up our fees, at least, to a living standard. Brother doctors of our towns and cities, think of a regularly established fee of only $5 for attendance upon a complicated labor case, and after services! Those of you who still use ignorant negro "grannies," demand for them more than double such a fee. If legislation could be secured to help the country doctor, it would do much to benefit humanity.

T. S. Hughes, M. D.

Cohutta, Ga., Dec. 20, 1897.

Peculiarity of Diabetic Blood to Aniline Colors.

It has long been known that, with eosin, normal blood cells assume a brownish color. Some time ago, Dr. Ludwig Bremer, of St. Louis, announced the discovery that with eosin, the blood of diabetes turns *a greenish-yellow.* After experimentation by Dr. Loewy, of Berlin, this discovery was confirmed in a report recently given at the Verein für innere Medicin.

Proceedings of Societies, etc.

CLINICAL SOCIETY OF ST. JAMES DISPENSARY, SAVANNAH, GA.

Regular Meeting, December 4th, 1897.

Dr. Van Marter presented a patient who had recently had *mediastinal abscess, which ruptured into a large bronchus,* discharged by coughing, and apparently cured.

Dr. St. J. B. Graham read a paper (see page 575) on

Puerperal Infection.

Discussion was opened by *Dr. Corson,* who said that there are two distinct types of puerperal infection, *the sapræmic* and *the septicæmic* —one much less dangerous, and amenable to local treatment; the other, very serious, and much less amenable to treatment, local or general. In one, curette and douche will change all symptoms for the better; in the other, they may do harm—especially the douche—for there is great depression, and any additional shock may make matters worse. In one, pulse is good, though fever may be high; in the other, pulse is bad, and fever not so high usually. He had a fatal case of puerperal septicæmia, which would have recovered had he not used the douche, though used with every precaution. In septicæmia, blunt curette and douche, with a good drain, will cure 99 per cent. of cases, if used early; in septicæmia proper, with bad pulse from beginning, with few or no symptoms of local trouble, with anxious countenance and sweet breath, and sweats, the large majority will die in spite of treatment, for the blood is surcharged with an animal poison, which requires an antitoxine to antidote it. The anti-streptococcic serum still requires careful investigation to prove its utility. He has no experience with it.

The majority of cases of puerperal infection are sapræmic, and usually easily controlled. His experience leads him to view with favor very foul lochia. Sapræmia seems to antagonize more virulent toxins. He has yet to have a death where it existed; all his fatal cases have shown little or no fetor, or evidences of local trouble.

As to antiseptics, he clings to bichloride of mercury, carbolic acid and creoline. Unite at once any torn vaginal or perineal surface; but not the cervix, as it would tend to close this natural outlet for lochia. He opposes touching torn vagina or cervix with iodine or strong carbolic acid; it discourages speedy union; antiseptic douches will clean abraided surfaces. For chancroids or phagadenic sores, use strong applications—nothing less than nitric acid.

He opposes the coal-tar group, except in small doses for analgesic effects. As antipyretics, they injure patient and deceive physician. Some prescribe veratrum viride in fulminating septicæmia, and rub their hands with glee because pulse goes down to 70 from 140, but *the patient is dying.*

He believes in free catharsis in the beginning, and kept up in certain cases. In ordinary septicæmia, give quinine with nitric acid. In marked septicæmia, drop all drugs but alcohol in large quantities, and morphia for sleep.

In two very severe cases, wonderful results followed *ice over the entire abdomen,* kept there for days, with skin of abdomen as red as a boiled lobster. It is recommended by authorities.

Encourage the taking of large quantities of fluids—peptonized milk, whiskey and water, and barley water in place of plain water; subcutaneous injections of normal salt solution, or intravenous injections of the same.

While easy to know *how* to interfere, it is not so easy to know *when.* Many cases have slight septic fever on third day (milk fever), lasting 24 to 48 hours, which disappears spontaneously; here interference is officious. But if fever, starting on the third day, rises above 101°, with uterus tender and larger than it should be at this stage, with scanty or suppressed lochia, or lochia with fetor, furred tongue and general malaise, we have a clinical picture, not very uncommon, and which yields to a proper curettage and douche, with a mercurial purge and a saline. To do these cases properly an anæsthetic may or may not be necessary; it depends upon the patient. He has curetted many without anything; others would not permit a speculum without anæsthetic.

But if pulse is rapid and weak, patient dejected and anxious, fever out of proportion to gravity of other symptoms, and local symptoms are insignificant apparently, we have a clinical picture totally different. If we interfere locally it must be under an anæsthetic, for the system is already under profound shock. Usually there is no great amount of uterine debris to be brought away. The poison has long before leaped the uterine barrier, and is far away from curette or douche; generally it is even beyond hysterectomy. This latter step is not to be considered, however, unless the operator knows his business well.

Dr. Fitch illustrated the differential diagnosis of two forms of septic infection most commonly met with—sapræmic and septicæmic.

Sapræmia is due to introduction of the products of putrefaction, produced by different schizomycetes, the so-called *saphrophytes*—minute organisms allied to algæ, and found all over the world in streams, plants and animals. Their growth and multiplication produce chemical substances (toxins), a kind of ptomain, which gives rise to fevers. Ptomains are alkaloids produced in dead animal tissues during putrefaction.

Septicæmia is due to microbes that enter tissues and blood with or without the local seat of infection; they are almost exclusively streptococci pyogenes and staphylococci bacilli of Klebs and Löeffler.

To follow up these points he reported *a case of sapræmia.* Mrs. H., white, aged 32, in labor September 8th, 1893; normal in every particular; delivered in eight hours; fætus probably dead a week; hemorrhage not alarming, but quite free; placenta delivered without trouble; uterus contracted normally, and patient was thought to be doing well. September 12th he saw patient with attending physician. The second day the patient was restless and complained of not having "enough flow." Bowels responded to the usual laxative—castor oil. Third day, late in evening, patient had severe chill, followed by rapid rise in temperature, 104°F.; pulse 120, respiration 26; noticed slight odor of lochia and mental hebetude. That night the odor of putrefaction was very marked, patient somnolent, with pale, anxious expression; pulse weak and very feeble, 120; temperature 105°F., respiration 30; abdomen greatly distended, reaching above umbilicus; uterus so soft and flabby that it was difficult to outline the organ through abdominal walls. Milk flow ceased after chill; skin moist, bed and body linen bathed in perspiration. With nail-brush we cleaned and scrubbed hands and arms as if to do a surgical operation, washed and scrubbed external soft parts; then with a sterilized syringe and 1-2000 bichloride solution, flushed the vagina; after again observing minute aseptic surgical technique, made an intra-uterine injection of sterilized normal salt solution, followed by 16 ounces of Marchand's peroxide of hydrogen, which, coming in contact with the albuminoid products of putrefaction, caused ozone to be liberated, destroyed the offensive odor, and brought out broken down blood clots, etc., leaving a sterilized drainage (six-inch glass) tube in uterus to facilitate escape of secretions; and directing patient to sit up to evacuate the bowels and bladder, to aid drainage, he then covered vulva with sterilized towel, ordered fl. ext. ergot, ʒj every two hours, till uterus contracted, gave 20gtts. tinct. ferri chloridi, and 20 grs. sulph. quinine and 20 oz. whiskey; had bed and body linen replaced by those fresh from the laundry. In two hours patient expressed herself as better; pulse 108, temperature 103°F., respiration 22; uterus beginning to contract; odor of putrefaction not so marked. After four hours it was again irrigated; used permanganate of potash instead of mercury bichloride, under *aseptic* precautions as at first. Both uterus and vagina were irrigated; several shreds and bits of tissue were washed out; then with dull curette thoroughly cleaned out uterine cavity; followed curettage with ʒiij of Marchand's peroxide of hydrogen, which completely cleaned the organ, and allowed pure sterilized water to run through till it returned perfectly clear, observing minor details of *aseptic technique.* Medicinal treatment continued, with directions as to injections, to be repeated every four hours. Milk, eggs and soup to constitute diet.

Next day patient expressed herself as feeling much better, after a good night's rest; temperature 101°F.; pulse 110, respiration 20; uterus contracting and no tympany; treatment continued; recovery uninterrupted.

The treatment of sapræmia falls under four heads. Discussion is, as to methods to obtain objects sought, which are: 1st. To cleanse parturient canal 2d. To secure tonic uterine contractions. 3d. To control temperature. 4th. To support the patient.

Compare above case of sapræmia with *a case of septicæmia.* Mrs. ——, white, aged 24, confined August 8th, 1895. In her second labor, first stage was 18 hours; second was one hour; third was about ten minutes, normal labor; placenta delivered by Créde's method, uterus promptly contracted; administered fluid extract ergot ʒj, ordered laxative and left.

Next morning found patient had not rested during night; pulse 100, temperature 101°, and respiration 20; uterus rather large, but firm and slightly tender on pressure; ordered turpentine stupes to abdomen, and an antipyretic —sulph. quinine grs. v, and fl. ext. ergot ʒss., every two hours. Did not call till next morning; she had a chill during night; pulse 120, temperature 103°, respiration 24; area of tenderness increasing in all directions till whole abdomen, already tympanitic, was included. Uterus remained contracted; no offensive lochial discharge; pulse very weak and feeble; breath had offensive sweet odor; mental faculties clear. Ordered quinine, iron and strychnia, good, nourishing diet. Next day patient had hard rigor, lasting 20 minutes; pulse 120,

temperature 104°, respiration 30; very nervous, hiccoughs; tympanites very pronounced; whole abdomen tender—could not take full breath without pain. Respiration shallow and irregular; some subsultus; tongue dry, coated to tip with a brown coating; face flushed; lochia free but not offensive. Ordered vaginal injections of sterilized water every three hours, tr. ferri chloridi, 15 gtts., every two hours, phosphoric acid dil., 10 gtts., and sulph. quinine, 20 grs., every three hours, and added tr. veratrum viride, 5 gtts., every two hours, closely watching effects. This treatment was continued twelve hours. During this time, pulse dropped to 84, temperature to 95.5F., and respiration to 22; patient slept about two hours; gave three grains of calomel in ¼ grain tablets, one every 15 minutes, and ordered light liquid breakfast, of which patient only took a small quantity. Same treatment continued. Twelve hours later found patient had slept about four hours; pulse 86, temperature 99°F., respiration 20; lochia free and of an oily appearance, with very slight odor; used a strong (50 per cent.) solution of "borolyptol," which stopped odor and rendered canal clean again. Treatment continued. Six hours later found patient felt much better; had slept 40 minutes; pulse 78, temperature 99°, respiration 20; ordered large soap-sud enema; result, very large action; gave strych. sulph., 1-50 gr., hypodermically. Treatment continued. Tympanites rapidly disappeared; soreness almost gone; discontinued turpentine stupes; lochia normal in amount and color. Twelve hours later, patient much improved; pulse 80, respiration normal, temperature 99°; stopped veratrum viride, and continued other treatment. Twelve hours later, pulse 78, respiration normal, and temperature 99°F. Ordered good, nourishing diet, and continuance of treatment. Twelve hours later, patient had slept about four hours; pulse 78, temperature 99°, tenderness over abdomen scarcely noticeable, lochia normal in amount, but no odor, regular evacuations from bladder and bowels; ordered ext of malt and stopped quinine and iron, and prescribed the four chlorides. Recovery uninterrupted.

The only change we would make to-day would be substitution of formalin for permanganate of potassium and bichloride of mercury solutions. Formalin in from two to four per cent. solutions is far superior to any known antiseptic or germicidal agent.

As to transfusion in septicæmia, where the patient is dying from toxine poisoning, if you bleed on the right side and use intra-venous injection of blood from a healthy subject, or normal saline solution injected into the left side, or *vice versa*, you get rid of part of the poison that is destroying chances of recovery. He has known lives saved by this means.

Dr. Lanier said Dr. Graham failed to mention that form during the puerperium where the infection does not enter through the genital organ, but passes from the large intestine into uterus and its appendages, and causes uterine symptoms identical with those observed after direct infection by streptococci. This condition is usually found only in constipated women, with dilated colon, generally several days after confinement. Keeping bowels freely open usually prevents this; likewise, we often cure such a condition by free catharsis. This point is mentioned because it is highly important to know every phase of puerperal fever in order to combat sepsis or toxæmia. We all agree as to common sources of infection in lying-in women; but why is it that, although negroes and poor whites are waited on by ignorant midwives, who use lard and greases to lubricate their fingers to examine the os and presentation, without even washing their hands, and with total lack of cleanliness from beginning to end—why is it that very few of these women have trouble after labor? Is it that micro-organisms, which develop puerperal sepsis, are not always present with the accoucheur and around the patient?

The fact is well known (except, perhaps, in country districts of England), that where cleanliness is observed in parturient and puerperal woman, her chances of being free from child-bed fever are practically assured. Hospital statistics show that thousands of women once succumbed to puerperal diseases, but it is now rare to find a death from such cause. This overwhelming victory has come about by taking patients out of infected wards, and by keeping them clean throughout their confinements.

If cleanliness, or asepsis, is the important consideration in prevention of puerperal infection, then why not observe absolute asepsis from the first step in preparation of every woman for the lying-in period? It is absolutely necessary to begin with surgical cleanliness, both in respect to our patients and ourselves, in order to feel safe in every case.

Modern obstetricians rarely have sepsis following child-birth, but enough cases occur to remind us of the necessity for being careful in the management of patients. If we take every precaution known to laparotomists, patients cannot develop sepsis any oftener than we look for septic peritonitis in patients upon whom

clean laparotomy has been performed, where there was no pus.

If half-way cleanliness saves nearly every woman from infection, why would not perfect cleanliness save all? For ideal accouchment, he maps out the following for prevention of infection: When labor has begun, order general warm bath and good scrubbing of woman, free saline cathartic, free saline vaginal douche; dress patient in clean clothes, have sterilized sheets, napkins and towels for her; with tr. green soap and water and razor shave pubic and vulvar region thoroughly, and with clean hands and sterilized warm water clean the vagina, wash vulvar region thoroughly and apply sterilized gause of napkins, to remain except when removed by accoucheur for examination; the physician must always have his hands surgically clean when he examines vagina or os uteri; last of all, keep scrupulously clean everything that touches the genitalia, from beginning until the patient is dismissed. If patient and doctor are both clean, there will be no danger of infection from examination. It is not possible to satisfactorily determine position of child, nor progress of labor, except by the finger in the vagina. The obstetrician should feel as free to make examinations during labor as the surgeon does in having his hands in a wound. The only certain way to ascertain stage of descent and condition of birth canal, is to put the finger in the vagina. While advocating perfect asepsis, the difficulties frequently met are almost unsurmountable; especially does this apply to the practitioner who cannot choose his patients or their nurses. As a rule, we are too lax in allowing confinement cases to be nursed by anybody whom the family happens to engage. Since it is upon us that responsibilities lie, and abuses fall, we should insist upon having an experienced nurse.

The doctor must make the best out of what are sometimes unpromising surroundings; but with a smart, common-sense nurse he may keep his patient and her dressings clean. In hospitals and homes of the well-to-do it is possible to observe strict asepsis and antisepsis.

Dr. Graham fails to place enough emphasis upon surroundings of patient and the best way to observe at least moderate cleanliness of the poor and ignorant among whom we are frequently thrown.

For years he has made it a rule to curette the uterus and irrigate it with bichloride solution, afterwards washing with plain water, and lastly applying tincture iodine to the endometrium, and leaving in the uterus a 30-grain iodoform suppository. This has been his course in nearly every case of fever during the puerperium where he could not throw out simple fever of non-septic character. When this method is followed, one daily treatment is usually sufficient to combat any sepsis arising from the genital tract. Indeed, he has seen cases which he knew to be of severe type, promptly yield to one or two such treatments. For eight years he has not lost a case from puerperal fever, whereas, previously he lost three women from puerperal septicæmia within two years.

Serum-therapy may yet save women who develop puerperal septicæmia.

Dr. Van Marter has not used formalin solution for intra-uterine or vaginal use, but imagines it to be very irritating in strong solution. Dr. Graham's suggestion in regard to use of steam from formalin solution, or vaporized formol, is worthy of trial. He does not use a dilator in puerperal infection; it is rarely necessary to dilate to secure free return current from a properly constructed intra-uterine irrigator. After irrigation, he mops out the uterus with Churchill's tincture of iodine. In most cases he curettes—quite often doing so when no shreds, clots or other detritus can be found, in the belief that it does at least no harm.

It is very important to use *very* hot water for douching. Internally, besides whiskey *ad libitum*, he rarely omits large doses, frequently repeated, of chloride of iron and bichloride of mercury, free purging with salts, and in future in very grave cases, he shall not omit intravenous injections of normal salt solution. He has seen lives saved by this measure. The technique is simple, and at least it does no harm. It is often wise to precede the injection by venesection, in those few cases in which the pulse is not too dangerously weak.

He wished to impress the urgent necessity, in this locality, of blood examinations for plasmodii in every case of temperature in the puerperium; blood examination clears up doubt at once. Quinine is useless unless blood examinations are made. He can recall cases in which blood from the finger had been examined with negative results, as the condition of the puerpera was ascribed to septicæmia, when subsequent examination revealed a large spleen, and puncture in that organ revealed crescentic bodies and broken down plasmodii in the blood and the patient eventually cured by appropriate treatment.

Dr. Lattimore favors hot bichloride vaginal douche, 1:5000, immediately after third stage of labor; it removes clots from vagina and

thoroughly cleanses it, and, reflexly, brings on vigorous contraction of the uterus.

Dr. Graham outlined preventive treatment of septicæmia, on which he thoroughly agrees. As to treatment of the condition of septicæmia, with special reference to advisability of uterine douches where the uterus is free from placenta, membranes and clots, his mind is not quite made up. Sometimes thrombi closing the mouths of uterine sinuses are washed away by the douche, rapid absorption takes place, and very soon follow chill and collapse. He has seen in a large exclusively maternity hospital, from 450 to 500 deliveries without a single case of septicæmia Of course, such statistics are impossible in private practice. On the general treatment of septicæmia, we all agree—stimulation, nourishment, small doses of quinine, and hot vaginal douches.

As to the second form of puerperal infection, viz: *sapræmia*, the best plan to avoid it is: Be sure of asepsis. If placenta and membranes have not come away complete, then either go into the uterus just after third stage, or twenty-four hours later, with Tucker's membrane forceps; anæsthetic unnecessary. Then we feel sure that uterus is free from debris. These precautions were carried out in the hospital; hence the good statistics. When placenta comes away complete and parts of membrane are left behind, the rule is: If one-fifth of chorion was missing (the amnion is never left in utero unless placenta remain), it was not "fished for," but give daily, A. M. and P. M., hot bichloride douche, 1:5000—temperature, 110°. The remaining one-fifth of chorion comes away in shreds or is completely disintegrated, and generally without imparting odor to the lochia. With this technique we had very few cases, even of sapræmia.

In a third class, a set degree of sapræmia was due to *poor drainage*—uterus being deflected, or markedly antiflexed or retroverted, forming acute angle of the cervix, thus damming back lochia, resulting in fœted odor and some fever. This cause was always thought of when sure of asepsis and everything had come away complete. Some cases were brought in on the ambulance, in labor, when we had no time for preparatory cleansing. In the above cases, by correcting position of uterus and giving hot douches, the fever, which ran from 100–102.5°, quickly subsided.

Not uncommonly during puerperal convalescence, fever is due to other trouble than in the parturient canal, and we should at least exclude the following *common causes of fever:*

(a) Malaria, tuberculosis, tonsillitis, etc.

(b) Breasts—abscess forming.

(c) Bowels—constipation will easily cause temperature of 100–102°, which goes down when bowels are moved.

(d) Have vulva clean and sterile; if hot douches are ordered, look after douche bag, etc., so that there is no chance of infection from that source.

Frequent examinations during labor are wise, as the progress of labor can thus only be accurately ascertained. Of course, fingers are clean before introductiou into vagina.

Dr. Graham stated that the paper is on puerperal infection *from the writer's standpoint.* Prophylaxis is the most important question at issue—prevention is better than cure. He only advocated the nail brush for the *hands and arms* of physician and nurse. Points of differential diagnosis between septicæmia and sapræmia were not dwelt upon. Chancroids and other lesions of the parts can be treated and relieved beforehand. Tears and ruptures should receive prompt attention. Bichloride of mercury coagulates albumen of tissues and in wounds, forms sometimes coagula underneath which bacteria may grow; that is why preference is given formalin; besides, formalin is non-toxic. Dangers of absorption poisoning and chemical peritonitis from bichloride are great; cases have been reported. The chemical agent held in solution in water of the douche has something to do with its untoward effects. The use of antipyretics is plainly symptomatic treatment, and often do more harm than good. Outside of generalization, each case is a law to itself as to diet, treatment and handling. Auto-intoxication is not so much caused by bacteria or toxines as by leucomaines, products of retrograde metamorphosis, which, on account of insufficient elimination or oxidation, become absorbed.

Hardy women do not develop puerperal fever, because they live more as nature meant they should, and possess more of born or acquired immunity to disease-producing properties of micro-organisms. This question opens the gate to that almost untrodden field of sus ceptibility and immunity. Something in the organism of animals protects them from harmful influences of certain micro organisms. Exactly what this is, biology and bacteriology have not made known. The healthier and stronger the individual, the less liable she is to infection by pathogenic organisms. Why do we not have infection through the unbroken mucous membrane of vagina or mouth where numerous bacteria are being continually introduced? It is not the acid or alkaline con-

ditions of fluids present, but some chemical principle which acts to rob bacteria of capability of doing harm.

Sheets, absorbing pads, etc., should be fresh from laundry. Pads may be of any material, but he prefers cheesecloth (gauze) freshly boiled in 1 per cent. soda solution and wrung out for use.

Too great force or insufficient outward flow of the douche might force fluids through the tubes into the abdominal cavity; bichloride can thus set up chemical peritonitis.

After normal labor, when tolerably sure of asepsis, he would not use any douche; there would be no indication for it. In sapræmia or septicæmia, he would use the douche where indicated, but would not use bichloride of mercury. Slow pulse shows small amount of toxine or septic absorption. Free catharsis, perspiration and diuresis are good in that they aid in throwing off poison.

In our low-lying latitude, the diagnostic value of blood examination for plasmodium cannot be over-estimated. Formalin or formaldehyde, in strengths of 1 to 2 per cent., is not irritating, and is of great value with its property of fixing and penetrating the capsule surrounding bacteria and killing them and their spores in a manner that bichloride will not accomplish. Its advantages over bichloride are many.

The finger in utero determines whether or not it is soft and pulpy, as to its freedom from retained material, new growths, trauma, etc. The dilator, used with due caution, gives free return flow and allows thorough washing out gotten in no other way. Transfusion in extremis he has seen do good. Washing the blood has proven of value in some cases.

RICHMOND ACADEMY OF MEDICINE AND SURGERY.

Regular meeting held December 21, 1897. Dr. J. N. Upshur (President), in the chair. Dr. Mark W. Peyser, Secretary and Reporter.

Election of officers for the year 1898, resulted as follows: Dr. M. D. Hoge, Jr., President; Dr. E. C. Levy, First Vice-President; Dr A. L. Wellford, Second Vice-President; Dr. A. C. Palmer, Third Vice President; Dr. Mark W. Peyser, Secretary and Reporter; Dr. W. H. Parker, Assistant Secretary; Dr. R. B Teusler, Treasurer; Dr. R. A. Nichols, Librarian.

Reports of Cases.

Vomiting of Blood by One-Day-Old Infant.

The President reported a case the like of which, he said, he had never seen before. On Sunday afternoon, 19th, he delivered a primapara, after an easy labor, of a girl baby weighing six pounds. It nursed heartily and there was no indication of trouble for twenty-four hours, when it threw up blood and colostrum. The history of the parents was unexceptional. Within a few hours after vomiting, there were frequent operations containing large amounts of meconium and blood. The skin and mucous membranes were pallid, the fontanelles depressed, and sutures prominent. He was at a loss to account for the hæmorrhage; but his idea was that there existed engorgement of the liver with congestion of the portal system and hyperæmia of the stomach and bowels. Thus, he prescribed calomel, two grains, and chalk, one grain, divided into ten powders, one powder given every hour. This afternoon (21st), the child was getting under the influence of the calomel, and as a result, there was less blood in the last three operations, and the child was progressing very satisfactorily. After mentioning the case to several medical friends who had never seen or heard of such a case, he consulted the *American Text Book on Children*, and found reports of several cases with suggestion of just such treatment as he had given.

Fulminant Appendicitis.

Dr. George Ross said that in the past week, he had had the only case of *fulminating appendicitis* he had ever seen. The patient was a man, age 21, of feeble physique, night operator of the long-distance telephone. He had had bronchitis and recovered. On the night before his death, he seemed perfectly well. When seen at 3 P. M., there was a temperature of 102.5°; pulse, 130; and marked tenderness. At night, temperature was 101.5°, pain diminished, but general condition unfavorable. A consultation was held, with the result that the patient was taken to Virginia Hospital, but died before he could be placed on the table.

Appendicitis—No Pathognomonic Symptom Usual.

Dr. Ed. McGuire said he had seen a large number of cases of appendicitis, and had reached the conclusion that no single symptom could be relied upon to determine an operation. In the case of Dr. Neblett, there was suppurative peritonitis with a necrotic appendix. He had been improving, and on the evening of his death, was thought to be out of danger; but he was seized with convulsions, and in three hours was dead. The urine was loaded with albumen.

Last Monday morning, he saw a young man who had had a cramp the night before while on

the train. There was a regular pulse and no fever. On the right side was a little tenderness. The bowels were free, but he had vomited. Thinking it was cholera morbus, calomel was prescribed. In the afternoon, upon making a second visit, he found increased tenderness, with a temperature of $100\frac{4}{5}°$. Appendicitis was diagnosed, and the patient taken to Virginia Hospital and operated upon the next day at 1 o'clock. A necrotic appendix was found. Recovery ensued.

Dr. McGuire said, in conclusion, that he had again and again seen cases where the symptoms were slight, but the course of the disease bad. He thought if all cases could be operated upon within twelve hours, mortality would be reduced 1 per cent.

Occlusion of Opening Into Cæcum Possible Cause of Appendicular Abscess of Fulminant Appendicitis.

Dr. W. T. Oppenhimer observed that *in the fulminating form the appendix was always occluded next to the cæcum*, distension resulting from accumulation of gas or pus In a number of cases, the appendix could be cut off and no opening seen; therefore, he believed that in these, if the organ could be taken away close to the cæcum, no escape of pus would result because of the agglutination It was possible that a ligature was not necessary in these instances, and not applying one would prevent secondary hæmorrhage. He had observed cases without fecal fistula, in which the appendix had sloughed off and was floating in pus. Never having seen the point mentioned in any literature, he was of the opinion that it and the question of ligature should be investigated.

Dr. Hugh M. Taylor thought appendicitis capable of furnishing a greater number of surgical surprises than any disease with which he was familiar; and while it had claimed the lion's share of professional thought for the past ten years, we were only upon the threshold of knowledge as regards many of its most important phases. Its etiology was an open question: a terminal circulatory supply; a short mesentery; a structure of feeble resistance; an estuary in the fecal current often blocked; and an ever-present micro organism were credited as etiological factors; but we must ascertain more of its causation before we could hope to do anything in the way of preventing it. Ideal surgery was, of course, preventive surgery, and it was to be hoped that future evolution of the subject might attain such an end. Individual and collective professional opinion as to appendicitis—its etiology, symptoms and treatment—presented a succession of acrobatic changes. He thought he was correct in claiming that many more conservatives were becoming radical in their views as to the importance of early operative interference, and thorough work whenever the condition of the patient warranted. His experience fully sustained the conclusion that an early resort to operation found the patient sufficiently strong to endure complete work—*i. e.*, strong enough to bear the prolonged anæsthesia, removal of the appendix and pus cavity, unmatting of the bowels, resection of infected omentum, etc. He would impress the idea that an early operation was conservative in that it sought to prevent pus collections and adhesions of the appendx, bowel and omentum, and the serious complication of septic, purulent or fibrino-plastic peritonitis. He contended that at some time in the history of every case of appendicitis, it was entirely a local phlegmon, and this was the elective period for operative interference.

Some of his friends, medical John Jaspers, rarely saw cases of appendicitis, and never met with cases calling for operation. When a practitioner of experience told him he never had torn perinei, he felt like telling him "Your eyesight is defective," or "You do not lift up the sheet to look." So when a man told him he never met with cases of appendicitis, he was tempted to urge him to study its symptoms, and was almost willing to promise him acquaintance with a surprising number of cases.

Typical appendicitis should be as easy to diagnose as typical pneumonia, typical typhoid fever, etc.; but, unfortunately, we met with a good many cases which were atypical, and in this class, the differential diagnosis was not always easy. Three conditions in the right half of the abdomen and pelvis notably, presented symptoms simulating some one of the clinical types of appendicitis. He alluded to gall-tract and tubo-ovarian inflammations and displaced right kidney with renal or Dietel's crisis. The diagnosis was, of course, easier in men, inasmuch as cholelithiasis and its consequences—cholangitis, cholecystitis, empyema of the gall-bladder and gall-tract colic were so much more frequent in women. Displaced kidney and its effects were likewise more common in women, and usually occurred on the right side. Inflammation and suppuration from tubo-ovarian disease, and that incident to appendicitis, might present symptoms in common, but, usually, the differentiation could be made. The intimate lymphatic and vascular connection between the right broad ligament and the meso-appendix should be borne in mind, as it ex-

plained the frequent co-existence of appendicitis and right tubal inflammation. Conditions less frequently and less positively, obscuring diagnosis of appendicitis were typhoid fever, ileus, intestinal indigestion, tubal gestation, gastric ulcer, hysteria, etc. He had at the present time, two cases of phantom appendicitis. In both, he was satisfied that the morbid condition existed only in the nervous system. Both patients were able to simulate many of the symptoms of appendicitis, as localized pain, muscular rigidity, etc. He was obliged to anæsthetize one in order to satisfy himself as to diagnosis, while the other spent sleepless nights and anxious days, and upon one occasion implored him to operate, so that he need not endure another such night of agony.

Dr. Ed. McGuire said if Dr. Oppenhimer's suggestions were followed, there would be liability to secondary infection. He had seen fecal matter in more than one instance in such cases.

Analyses, Selections, etc.

Medical Review of Year 1897.

The Boston Medical and Surgical Journal, December 30, 1897, gives editorially so valuable a report of the important events of 1897, that we copy it almost in its entirety:

The year 1897 has not been marked by great medical events or discoveries, unless in medicine the bacillus icteroides and antitoxin serum of Sanarelli, and in surgery the procedure of forcible straightening of the spine in Pott's disease, introduced by Calot, and now being extensively practised in England and on the Continent, shall stand the test of time.

Medical progress during the year has, however, been substantial, and has been greatly facilitated by the free interchange of thought and opinion which has been made possible by the great Congresses of the year, and in particular by the International Congress at Moscow.

The year's experience has confirmed the value of the antitoxin serum of diphtheria, and given encouragement in the serum treatment of tetanus. We still await further proof of the substantial value of the serum treatment of plague, of the serum treatment of streptococcus infection, and of the tuberculin treatment of phthisis, and the other forms of tubercular disease.

The year has been marked, as have none of the years recently preceding it, by the devastation of large tracts of country by disease and famine, as evidenced in the plague, cholera and famine-ridden peninsula of India; in these respects 1897 will be long remembered by the swarming native population as one of sickness, misery and death.

In the Western Continent the Island of Cuba has presented a revolting picture of the evils of war among a semi barbarian population; and yellow fever, smallpox and starvation have devastated the unhappy island, the conditions growing steadily worse with the apparently indefinite prolongation of the struggle.

The costly and fatal epidemic of yellow fever, which has for the first time since 1878 visited our own Southern territory, is one of the results of these conditions, and we may well inquire how long they are to be allowed to remain uncorrected.

The probability of legislation which shall either establish for this country a new department of public health, or of such reorganization of the Marine Hospital Service as shall render its work in the protection of our coast-lines and frontiers from the invasion of epidemics, is an encouraging result of the work of the American Medical Association and the American Public Health Association toward this end.

The recommendation to Congress, by President McKinley, of the appointment of a commission to investigate yellow fever, it is hoped may lead to substantial increase of our knowledge of this disease, and of the methods by which it may be controlled.

YELLOW FEVER.

To the perennial presence of yellow fever in Rio de Janeiro, Mexico and West Indian ports, which is a constant menace to this country, and in particular to the Southern seaports, there has been added this year a great increase of the disease in Cuba, owing to the continuance of miserable sanitary conditions, which have grown worse with the continuance of the war. The Spanish indifference to sanitation, as is evidenced by the fact that the main sewer of the city of Havana debouches in the harbor close to one of the important wharves, and that in a city of the size of Santiago there are no sewers at all, has given yellow fever a continuous hold in Cuba. When this fever-infested land becomes the home of unacclimated troops, who are kept, for the most part, crowded together in cities, and when the agrarian population are herded into the towns in a starving condition, fever finds an all too easy prey in the famine-stricken population. These conditions, which prevailed during 1896, have

been accentuated during 1897, as the continuance of the guerrilla warfare has exhausted the food supply of the island.

Yellow fever and smallpox have continued epidemic during the year—smallpox affecting most severely the natives of the country, and yellow fever the unacclimated Spanish troops. The Spanish military hospitals have been filled to overflowing with yellow-fever cases all through the year, and especially during the summer and autumn months.

Although during the autumn yellow fever has somewhat declined, the general death-rate, owing to the prevalence of dysentery and other diseases due to hardship and poor food, and of malaria, has continued to increase.

The total number of deaths in the city of Havana and the town of Regla during the month of November from all causes amounted to 2,317, equivalent to an annual death-rate of 139 per thousand inhabitants. In June there were 1,041 deaths; in July, 1,193 deaths, equivalent to a death-rate of 71.52; in August, 1,439 deaths, equivalent to a death-rate of 86.34; in September, 1,778 deaths, equivalent to a death rate of 106.68; in October, 2,272 deaths, equivalent to a death-rate of 136.32. Such figures as these are a sufficient comment on the sanitary conditions in Havana.

The danger to the United States from the extent of the prevalence of yellow fever in Cuba has been throughout the year fully realized by the officers of the Marine Hospital Service; and from the very first of the year, the same regulations which had protected this country from an invasion of yellow fever during 1896 were continued in force. The inspection of passengers and baggage at Cuban seaports, the labelling of the latter, and the detention at quarantine of suspected vessels, have been kept up with the utmost vigilance throughout the year. Through the spring and summer, evidence of the increased extent of the disease in Cuba, and consequent danger of its introduction into the United States, was given by the number of vessels which it was necessary to detain at quarantine at New York or Southern ports owing to the presence of yellow fever on board, or the fact that cases of the disease had occurred during the voyage. The disease was constantly knocking for entrance at the sea gates of the country, and at length, late in the autumn, for the first time since 1878, gained so extensive an entrance as to result in an epidemic, which cost us many lives and a vast amount in money.

In Rio Janeiro, throughout the year, although more or less yellow fever was continually present, the cases have been few, and there has been no serious epidemic.

In March the Norwegian bark *Homewood*, from Rio for Pensacola, Fla., had two deaths from yellow fever on the voyage, and was held for disinfection at the Tortugas quarantine station. On April 22d, a passenger on the steamer *Finance*, from Colon, was found at New York to be ill with yellow fever, and died at the New York quarantine station. In June a case of yellow fever was brought to quarantine at San Francisco by the steamer *City of Para*, from Panama. In August two cases of yellow fever were brought from Havana to New York on the steamer *Allianca*, and on September 22d two more cases were brought to New York from Colon on the *Finance*. In October the British steamer *Honiton*, from Progresso, Mexico, for Boston, was detained and disinfected at the Boston quarantine station, as three men had died from yellow fever on the voyage.

Yellow fever was carried, in April of the present year, from Guayaquil in Ecuador to Panama, then across the Isthmus from Panama to Colon. It was epidemic in the Isthmus all summer.

A severe epidemic of yellow fever occurred in the Island of Jamaica in October and November, several American residents and officers of British troops falling victims to the disease. Information was forwarded to quarantine stations in this country, by bills of health and other reports, and for a time the Boston Fruit Company's steamers ceased taking passengers from Jamaica. The epidemic served to call attention to the fact that the British Government enforced no compulsory report of contagious diseases on the island, so that the epidemic attained uncontrollable proportions before its outbreak was known.

About the 20th of August, at Ocean Springs, Miss., a summer resort on the Gulf Coast, the population of which is made up chiefly of excursionists from New Orleans, Mobile, and the interior country, it was reported that five or six hundred cases of disease had occurred, which had been pronounced by experts appointed by the boards of health of Mississippi and Louisiana to be dengue. September 6th, Passed Assistant Surgeon Wasdin, of the Marine Hospital Service, performed an autopsy on a case which had died with the symptoms of the prevailing disease and pronounced it yellow fever. An immediate exodus took place of the residents of Ocean Springs to their homes in New Orleans and the surrounding country, and a detention camp was established at a point

on the Louisville and Nashville railroad, 20 miles east of Ocean Springs. John Guiteras, M. D., Professor of General Pathology and Morbid Anatomy, University of Pennsylvania, appointed temporary Acting Assistant Surgeon of the Marine Hospital Service, visited Ocean Springs September 8th, and made the diagnosis of yellow fever in three cases, this diagnosis being subsequently confirmed in one case by an autopsy made by Dr. Wasdin. The large majority of the cases of prevailing fever Dr. Guiteras pronounced to be dengue.

On September 8th, a death from yellow fever occurred at New Orleans in the case of a patient who had just returned from Ocean Springs, and and on September 10th the disease appeared at Scranton, Miss., and at Barkley, La., a river port on the lower Mississippi. By the 15th, Dr. Guiteras had established the diagnosis in several cases in Mobile, and at Edwards, Miss., the disease having been brought to the latter town direct from Ocean Springs. The disease also appeared at Biloxi, and by September 15th 14 cases had occurred in New Orleans. By September 19th, it had spread up the Mississippi valley as far as Cairo, Ill., where two cases were reported. On September 23rd, one case occurred at Atlanta, in a refugee from Louisiana.

During September and early in October, the disease spread in New Orleans, and by October 5th from 30 to 40 cases a day were being reported in that city. A large number of cases occurred in Edwards and Biloxi during September, but early in October the epidemic in these towns markedly diminished. In New Orleans, however, the disease increased during October, 60 cases being the highest number reported on any one day (October 20th). From this date until November 6th, from 30 to 50 cases a day were reported; but, in the week ending November 11th, frosts were reported in the Gulf States and Mississippi valley, and a coincident sharp decline in the epidemic took place. During the month of October, 1,285 cases and 149 deaths had occurred in New Orleans. Early in November, an epidemic of so-called dengue in Galveston and Houston, Tex., was shown by Dr. Guiteras to be yellow fever; and during October a considerable epidemic occurred at Montgomery, Ala.

On November 29th, there were, for the first time since the epidemic begun, no new cases and no deaths reported in New Orleans. From the beginning of the epidemic to that time, 1,893 cases and 293 deaths had occurred in that city. From the beginning of the epidemic to December 1st, when it was practically ended, 4,385 cases and 462 deaths had occurred in this country, as computed from the tables in the Public Health Reports.

Throughout this epidemic, the Marine Hospital Service was active in carrying out rational measures for the detection and prevention of the spread of this disease. Numerous quarantine regulations of the shot-gun variety were established, however, by the local authorities in many of the affected districts, which had the result of seriously crippling trade and travel, and even of preventing the government experts who were taking all due precautions against conveying the disease, and were visiting infected points for the purpose of detecting and restricting the disease by rational measures from reaching the points to which they were detailed. The results of such clumsy and inefficient methods tended to favor rather than to restrict the spread of yellow fever.

As to the source of the present epidemic, there is little doubt, and such is the published opinion of Dr. Guiteras, that the disease was imported from Cuba. It has become evident that a proper sanitary administration of the port of Havana is the only means for securing the public safety of our Southern States, and also that under the present attitude of the Spanish government this condition is not likely to be obtained in the near future.

If the present epidemic had begun early in the summer season, and not in the autumn, and a comparatively short time before the early frosts, its ravages, which, in New Orleans at least, were evidently beyond the control of the sanitary authorities, would have undoubtedly been fearful in extent and severity. A disposition of certain local authorities to doubt the early reports, and later to belittle the prospects of the disease spreading and becoming epidemic, undoubtedly was influential in allowing it to gain a foothold.

The conditions offered ample food for reflection on the necessity of eternal vigilance, the adoption of proper, and rejection of improper, methods for the prevention of other such visitations as that through which we have just passed.

PLAGUE.

We have no need to remind our readers that the year 1896 closed with a fearful epidemic of plague in Bombay and Calcutta, which had already caused nearly two thousand deaths, and which was still increasing. The city was being depopulated by death and flight and the disease was spreading to the surrounding country, already stricken by famine. The increase

and spread of the epidemic continued through January and February, and by the end of January there had been 4,396 cases officially reported—3,275 deaths from plague in Bombay alone, which was probably half the actual number. There was a serious epidemic at Kurrachee, and the infection was spreading along the coast to the north of Bombay and into the interior. The disease, as will be remembered, first appeared in one of the most squalid quarters of the city, and was believed to have been introduced by shipping from Hong Kong, in which city plague was epidemic during the autumn of 1896. At first only natives of the poorer classes who, as is well known, live in filthy and crowded dwellings, where the most primitive sanitary provisions are disregarded, furnished the food for the epidemic; but soon the wealthier classes and even Europeans were attacked, and Dr. Robert Manser, the English physician in charge of one of the larger Bombay hospitals, fell a victim.

During the winter, the local plague commission of Bombay, established hospitals in every ward, started a house-to house inspection, and destroyed by fire uninhabitable and unsanitary houses, thus endeavoring to atone for their unwillingness to recognize that plague was epidemic at its inception, when vigorous sanitary measures might have stamped out the disease and saved thousands of lives, an inestimable amount of suffering, and an enormous loss of money due to the paralysis of trade. Partly, perhaps, in consequence of these measures, and partly of the fact that the exodus from the city had left few fresh victims for the disease to feed on, a slight decline took place in Bombay during March, but its spread and virulence in the interior remained unabated.

Up to March 30th, when the epidemic had begun to abate, there had been 9,118 cases and 7,602 deaths from this disease in Bombay, according to the official reports, which figures were undoubtedly very far indeed below the actual number of cases and deaths. At this time it had markedly declined in the wards first affected, and was evident in those parts of the city which it had reached last in its course.

With the return of refugees, which began during March, fresh cases began to be reported in parts of the city where the disease was supposed to have been stamped out by disinfectants and lime-washing, and large numbers of the servants of European families fell victims. In April there had been 41 hospitals established for the treatment of plague in Bombay, and one of them, the plague ward of St. George's Hospital, was reserved exclusively for Europeans. Plague was then epidemic in Western India from 15° to 28° north latitude, and had extended 150 miles into the interior.

By the end of April, the population was returning to Bombay at the rate of 1,500 to 2,000 per day, and in spite of this fact, a gradual decrease in the number of cases and deaths was reported. In the beginning of May there was a marked decline, and from the middle of June the number of deaths had fallen to 20 or 30 a week. The disease smouldered in that city through July and August, the death-rate falling to 50 or 60 a month. During September and October, there was a recrudescence, although no epidemic approximating that of the closing months of 1896 is reported. In Poona and other towns and country districts in the Bombay presidency, plague continued all summer, and in spite of the efforts of the officers of the Indian Medical Service had gradually spread further into the interior, and in October was active in the Punjab, in Cutch, the Central Provinces, and Sind. At Poona, a severe recrudescence took place in November, and the disease claimed 1,100 victims a week, more, in fact, than at any time previously.

The epidemic of plague in India, although strenuous efforts were made to control it by the British military and civil authorities, was favored in its spread and continuance by the filthy habits and ways of living of the native population, a condition upon which a glaring light was thrown by the investigation which the pestilence in the affected districts, and in others its impending danger, made necessary.

The city of Calcutta, although it fortunately escaped the plague, was, as usual, the seat of a severe cholera epidemic, and an investigation disclosed frightful sanitary conditions prevailing among the native population. In the words of a writer in the *British Medical Journal:*

"The question is forced into urgent consideration whether the natives of India—even the educated and enlightened—are fit to be entrusted with the responsibility of sanitary administration. Skilled and intelligent opinion in India has pronounced on this question very emphatically in the negative, and the facts displayed in this correspondence make it quite certain that the governments of India must, for some time to come, either resume the care of the public health or take such steps, in the way of supervision and command, as will ensure the proper and thorough execution of all those arrangements and contrivances which

advancing civilization has demonstrated to be necessary for healthy existence."

The severity and continuance of the epidemic in India this year has naturally aroused anxiety lest an invasion of Southern Europe, particularly Turkey and the Mediterranean countries, should take place, and every precaution has been taken to prevent such a disaster. In this country, early in the year, the cholera restrictions of the previous season were put in force against plague-infected ports. The government of France imposed strict quarantine regulations, and forbade the annual Mohammedan pilgrimage from its African dependencies. Austria imposed quarantine regulations, and the Italian government called an International Conference at Venice to consider measures against the importation of plague and cholera. The Turkish Superior Council of Health put in force stringent regulations with regard to the sanitary care of the pilgrims visiting Mecca from January to June, including quarantine at the Island of Camaran.

At the International Sanitary Conference, which met at Venice in February, the origin and nature of the plague, its means of transmission, duration of inoculation, means of disinfection, and measures to prevent its entrance into Europe, and bring it under control in case entrance should have been effected, were the subjects of discussion. Measures for quarantine, inspection and disinfection of vessels from infected ports, were adopted, and were, it is understood, put in force by the governments signing the Convention.

In April the British Governor-General of India, after some vacillation and delay, forbade emigration from the plague-stricken districts of India, thus preventing the Mohammedan pilgrimage to Mecca. As a result of this and of the precautions of the Persian and Turkish governments, no outbreak of plague took place in the Yemen during the pilgrimage. On June 10th, after the close of the pilgrimage, a slight outbreak of plague occurred in Jeddah, the port of Mecca, but it was limited to sixteen cases and did not spread to Mecca or into the interior. Special sanitary officers were detailed by the Turkish government to get it under control.

Plague has been epidemic along the southern coast of China all through the summer of 1897 to an extent which it is impossible to estimate, as the government takes no census and keeps no record of births or deaths. In April plague was epidemic in Swatow and the surrounding country, and the government of Hong Kong took the unprecedented step of prohibiting immigration from the Swatow district. In April there was an epidemic in Macao, the Portuguese settlement, but a few miles from Hong Kong. A few cases occurred in Hong Kong during the summer, but the worst visitation on the Chinese coast occurred at Amoy and the neighboring towns. In July the deaths in Amoy and four neighboring towns are believed to have reached a total of 400 daily. Almost all the attacks were fatal. The disease diminished during August and had practically died out in September.

Only one case of plague reached Egypt during the year, that being on board the British steamer *Bombay*, which arrived at Suez on March 31st. On the same date a case of plague was carried to the Russian port, Theodosia, on the British steamship *Baldwin*. In the autumn two cases of plague occurred at a sailors' hospital in London, both being sailors recently arrived from Bombay.

In Formosa plague was epidemic all summer, and a few cases were communicated to points on the Japanese coast.

SMALL POX.

The most extensive visitation of small-pox in this country during the year has been that which began in Pensacola, Fla., during the winter, and later extended through the neighboring districts of Alabama,—Birmingham, Montgomery and Mobile being chiefly affected. As a result of extension from this source an epidemic occurred in Atlanta, Ga., and the surrounding country. Only a few scattered cases have occurred in other parts of the United States.

During the winter a mild epidemic occurred in Pensacola, Fla., and the surrounding districts, and the disease continued there, though in a mild form, through the spring and early summer, the last case being reported in July. The district which suffered most severely was Birmingham, Ala., and the surrounding country, where small-pox began in May and has continued the rest of the year, diminishing, however, during the autumn. Between May 8th and November 21st 188 cases occurred, resulting, however, in only two deaths. During August there were 28 cases at Montgomery, Ala., and there have been during the year 33 cases at Memphis, Tenn. During the autumn there has been a not inconsiderable epidemic at Atlanta, Ga., 90 cases having been reported up to November 12th. The first case occurred in Atlanta on October 12th. All necessary sanitary measures have been enforced in the Southern cities where small-pox has appeared;

and in connection with the Alabama epidemic, shot gun quarantine has been maintained by local authorities in the neighboring districts. The disease at Atlanta has been largely among the colored population, who have resisted vaccination and disinfection.

A few scattered cases have occurred during the year in widely separated parts of the country, about 20 cases occurring in New York and Brooklyn between March and August.

In May five mild cases occurred in Boston, the first case, from which the infection spread, occurring in a car-cleaner, who was employed in cleaning sleeping and parlor cars. Three cases, two of them fatal, occurred in June at Gloucester, Mass., the first patient being a man recently arrived from New York. There were three cases at Cambridge, Mass., in June and one at New Bedford in April. Other States in which scattering cases occurred during the year were Connecticut, Illinois, Michigan, Missouri, Ohio (14 cases at Toledo), Pennsylvania and Washington.

As is evident from the above report, the disease was widely scattered, and has followed no definite routes of travel. It is probable that the epidemic at Atlanta was communicated by refugees from the yellow-fever and small-pox epidemics in Alabama and Mississippi.

There was a slight epidemic at Montreal, Can., in July and August, 17 cases occurring and nine deaths. The outbreak was brought readily under control by the authorities.

In Great Britain and on the Continent there have been no notable epidemics of small-pox during the year, though the disease has been continuously present in London, and has occurred in Dublin.

In March the steamer Delaware brought 22 cases of small-pox from London to Rudy Island Quarantine. The crew were vaccinated, and the sick were removed and treated at Delaware Breakwater Quarantine.

During the first six months of 1897 a serious epidemic of small-pox prevailed throughout Japan. Between January 1st and 22d, 5,711 cases and 1,600 deaths were reported from all parts of the Japanese empire. The epidemic was of wide extent and the type of the disease malignant. In February the steamer *Victoria*, from Yokohama, arrived at Port Townsend, Washington, having had a case of small-pox on board during the voyage, and the third engineer of the vessel afterwards developed the disease in Tacoma.

The arrival of steamers at Angel Island, the California quarantine station, reporting deaths from small-pox during the voyage was frequent, and detention at quarantine, disinfection of ship and cargo, and revaccination of passengers and crew was practiced whenever necessary. In April three cases of small-pox were brought to Port Townsend Quarantine by the steamer *Alice A. Leigh* from Japan.

During April, though still very prevalent throughout Japan, the disease had markedly declined in Yokohama, Kobe, and Tokyo, the ports from which infection was most likely to be carried to this country by steerage travel.

In Cuba small-pox has been epidemic to a serious extent throughout the year. During a single week in January 990 cases and 108 deaths were reported in Havana. During one week in February there were 30 deaths daily from small-pox in Havana. During April and May the disease declined to a marked extent in that city, and through the summer and autumn months no increase took place.

In Naples, Italy, small pox has been prevalent as it was during 1895 and 1896. In Zanzibar during July an epidemic occurred among the Indian and native population, though few Europeans were attacked.

CHOLERA.

The history of cholera this year presents little of interest, for the reason that it has fortunately been practically confined to the districts which are its constant habitat in India and China. During the first half of the year the plague-ridden city of Bombay almost entirely escaped it, and Calcutta, whose position at the mouth of the Ganges makes it the perennial home of the disease, was, as usual, the seat of the severest epidemic of the year. In that city it was moderately prevalent at the end of 1896, and during the winter months it gradually increased, until it reached its maximum in March, April and May, during which time there were nearly 1,500 deaths. The disease declined rapidly during the summer, and by October had almost disappeared. In Bombay, the disappearance of the plague during the summer was attended with an increase in cholera. In the month of August there were over 500 deaths from cholera in Bombay, but in September and October a considerable decline took place.

In Madras and Singapore cholera has been constantly present through the year, though there has been no epidemic.

In Ceylon there was a moderate epidemic during the last two months of 1896, and January, 1897.

On January 9th the P. & O. steamer *Nubia*, from Ceylon for Plymouth, England, arrived

at the latter port, having had five deaths from cholera on the voyage, and having on board four convalescents from mild attacks of the disease. The patients were all members of a regiment of troops homeward bound from Ceylon. The cholera was believed to have been contracted from eating infected fruit at Port Said, where the vessel stopped on December 29th, and not to have been brought from Ceylon; but the fact that two native members of the crew had died of dysentery on the way from Ceylon to Port Said, and that Port Said was not known to have been infected, point to the possibility of Ceylon having been the source of infection. Quarantine of the soldiers and isolation of the patients prevented any spread of the disease in Plymouth.

Cholera is known to have been present in Hong Kong during the year, and during the last six months has been mildly epidemic in certain Japanese ports. In July there were about 30 cases in Tokyo.

On March 22d the British ship *Clan McFarlane* arrived at Angel Island Quarantine, California, from Hong Kong, with 18 cases of cholera on the bill of health. Five days out of Hong Kong, one of the crew had died of diarrhœal disease, and four more had been attacked soon after. The water supply taken on at Hong Kong was known to have been bad, and believed to have been the source of infection.

The pilgrimage to Mecca this year was unattended by any outbreak of cholera. It seems probable that several reasons may have accounted for this, the chief of which was the prohibition, by the Indian Government, of the Mohammedans from leaving that country on account of the plague epidemic. The unusual precautions taken with regard to the sanitary care of the pilgrims by the Turkish Government for the same reason may have contributed to this result, as well as the activity of the other countries bordering on the Mediterranean against the transmission of infection by the pilgrimage.

BERI-BERI.

Beri-Beri is known to be always epidemic in the seaports of China and Japan, and this year has proved no exception to the general rule.

This disease has also been reported from disease-ridden Cuba throughout the year, being chiefly confined to the Chinese population in Havana. During the autumn it began to spread among the lower-class native population in Matanzas.

The usual number of cases have occurred during the year at Rio Janeiro.

A noteworthy outbreak occurred this year, as it has for several years past, in the Richmond Asylum, at Dublin, Ireland. The disease appeared in June, and by August 124 cases had occurred. Overcrowding and other unsanitary conditions are believed to be the reasons for the tenacity with which beri-beri clings to this institution, though it is thought that it must have been first introduced there by patients, or in food and clothing from some Eastern country. Steps were taken during the year to relieve the overcrowding and improve the sanitation. Beri-beri was brought to the port of Cork, Ireland, in August by a vessel arriving from the west coast of Africa.

In November the whaling bark *Greyhound* arrived at New Bedford, Mass., with five cases of beri beri on board, and having had three deaths from it during the last month. The bark was returning from a five years' whaling voyage.

TYPHUS FEVER.

In March there was an outbreak of typhus fever in Tokyo, Japan, 47 cases and 37 deaths occurring up to March 1st.

In October two cases of typhus occurred in San Francisco. The origin of this infection was not discovered.

TYPHOID EPIDEMICS.

In September and October an epidemic of typhoid fever took place at Maidstone, Kent, England, which was due to the infection of a large part of the water supply of the town by the drainage from a camp of hop pickers from London. The camp was pitched in a field draining into a pond from which part of the water supply was taken. When the epidemic began to decline, late in October, there had been about 2,000 cases, and during October there were 20 or 30 deaths per week.

In October and November there was a severe epidemic of typhoid at King's Lynn, a port of about 8,000 inhabitants at the mouth of the river Ouse, in Norfolk, England. This was also traced to infection of the town water supply with sewage, being surface drainage from a village situated on the banks of the Gayton river, from which the town supply is taken.

In Belfast, Ireland, an epidemic of typhoid occurred in November.

Marseilles, France, was the seat of an epidemic of typhoid in May. There were at one time 1,000 cases in the city. An impure water supply was probably the source.

CEREBRO-SPINAL MENINGITIS.

During the winter and spring of 1897, an

epidemic of cerebro-spinal meningitis occurred in Massachusetts, the extent of which, owing to the fact that physicians throughout the State do not notify their local boards of health of the occurrence of this disease, is not definitely known. Numerous cases were treated at the hospitals in Boston, 47 cases being treated in the Boston City Hospital from December 30, 1896, to June 1, 1897. The mortality in these 47 cases was 72 per cent. Lumbar puncture was done in a large proportion of these cases, and in most of them the diplococcus intracellularis meningitidis of Weichelbaum was found in the cloudy serum of pus obtained. An investigation is in progress by the Massachusetts State Board of Health, into the extent of the epidemic, and it is to be hoped that some light may be thrown upon the modes of dissemination of the disease.

During the last six months of the year the disease has not died out, and cases have been constantly under treatment in the Boston City Hospital.

ANTITOXIN IN DIPHTHERIA.

The reports on the use of antitoxin in diphtheria, which have appeared during the year, have continued to show a reduction in mortality amounting to the saving of thousands of lives by this invaluable product of modern medical science.

The second report of the collective investigation of the American Pediatric Society on the antitoxin treatment of laryngeal diphtheria in private practice, gave the results of 1,704 acceptable cases of laryngeal diphtheria in which antitoxin was used. Of this total, nearly 61 per cent. were not operated upon, and give a mortality of 17.18 per cent., a result which, though good, the committee rightly believes can and ought to be improved upon. Of the cases operated upon, the mortality was 27.24 per cent. The mortality in both classes of cases it is believed might be reduced were the standard of antitoxic serum assured, and were both physicians and friends of patients less timid in its use.

The report of the Imperial German Board of Health upon the use of diphtheria antitoxin in the hospitals in the German Empire from April, 1895, to March 1, 1896, published early in 1897, shows a fall in mortality from an average of 26.7 per cent. in 157,724 cases treated in the twelve years from 1883 to 1895, to 15.5 per cent. in 9,581 cases treated during the period mentioned above.

Every additional contribution to the statistics of the treatment has confirmed the fact which was demonstrated when the diphtheria antitoxin first came into use, that the prospect of success in a given case depends very much upon an early beginning of the treatment.

The mortality from diphtheria and croup in Massachusetts from 1891–4 had been 28.3 per cent. in 13,332 cases. The mortality in 1,209 cases since antitoxin has been employed has been about 13.5 per cent.

The report of the Metropolitan Asylums Board of London on the antitoxin treatment during 1896 shows that the favorable results which were reported during the first year of the use of antitoxin have been maintained. The report closes with the following conclusions as to the effects of the treatment arrived at by all the signatories except one:

(1) A great reduction in the mortality of cases brought under treatment on the first three days of illness.

(2) The lowering of the combined general mortality to a point below that of any former year.

(3) The still more remarkable reduction in the mortality of the laryngeal cases.

(4) The uniform improvement in the results of tracheotomy at each separate hospital.

(5) The beneficial effect produced on the clinical course of the disease.

All the other reports from whatever source have confirmed the value of the antitoxin in diphtheria.

ANTITOXIN IN TETANUS.

Partly, perhaps, on account of the rarity of tetanus, which is surprising considering the number of punctured and dirty wounds likely to furnish breeding ground for the bacillus, and partly, perhaps, from the difficulty of securing a supply of suitable antitoxin in time to be of effective service, but few reports of tetanus treated by antitoxin have come under our notice this year. A few cases of recovery from tetanus in which the inoculation took place by wounds about the face and head, the "head tetanus," which was formerly found particularly fatal, have been reported under antitoxin treatment. In general, the cases of tetanus which have recovered under antitoxin have not been of the most acute and fulminating type of the disease, in which the absorption of the toxin is so rapid that it is impossible to supply enough antitoxin units to neutralize it. However, there is reason to believe that certain cases on the border line between the most acute and chronic forms of the disease have recovered under antitoxin treatment and as a result of it.

The difficulty of securing a serum of sufficient

strength (and in order to be effective against the rapid production of toxins in the body it must be extremely concentrated) has rendered effective preparations of tetanus antitoxins rare and expensive. In this disease an inferior or weak preparation will prove of no service whatever, and in order to secure good results it is especially important to begin the treatment at the earliest possible moment and with a preparation of known strength.

Two cases of traumatic tetanus have been treated during the year at the Boston City Hospital with the antitoxin serum prepared under the auspices of the Massachusetts State Board of Health. One a moderately acute case, but infected through a wound of the face, recovered. The other, belonging to the most fulminating type of the disease, succumbed in spite of copious doses of the serum.

There is reason to believe, on the whole, that the recovery in the first case was due to the serum, for although the symptoms were not of the most rapidly progressive type, they appeared early (within five days after the infection), and, as noted above, the infection was through a wound of the face, and was attended by facial paralysis.

Lambert* gives a mortality for all cases of tetanus treated without antitoxin, of 60 per cent., and a 30 per cent. mortality for all cases treated with antitoxin.

Goodrich† gives the mortality in 113 cases treated by antitoxin, and of a like number treated by antispasmodics at about 63 per cent., but calls attention to the fact that fatal cases treated without antitoxin are not reported, while those treated with antitoxin usually are.

ANTISTREPTOCOCCI SERUM.

The value of the serum treatment of streptococcus infection is still *sub judice*. Steele‡ has tabulated 26 cases in which the antistreptococcic serum was employed in puerperal septicæmia, of which 16 recovered and 10 died. It is noteworthy that in 14 of these cases intrauterine douches or curettage were employed in addition to the serum treatment. If four cases in which the treatment was begun late (from the twenty-second to the twenty-fifth day in two of them), and all of which died, be excluded, we have 6 deaths to 16 recoveries, or a mortality of 18.18 per cent. An early administration is admittedly essential in order to secure good results in these cases; but there are so many other causes for transitory rises of temperature during the puerperium beside streptococcic infection, that in case the serum is given early and a rapid recovery ensues, we remain in doubt as to whether the disease was a true streptococcus infection. It is important to secure, if possible, a bacteriological examination of the uterine discharges with reference to the presence of the streptococcus.

Cases of lymphangitis and of erysipelas have been reported during the year as recovering under treatment with antistreptococcic serum, but, as is well known, erysipelas results in a spontaneous recovery in a very large percentage of the cases.

Several cases of very malignant endocarditis have been reported as treated with antistreptococcic serum with some measure of success.

THE BACILLUS ICTEROIDES OF SANARELLI.

In July, 1897, Prof. G. Sanarelli, director of the Institute of Experimental Hygiene in the University of Montevideo, published, as a result of investigations carried on at the island of Flores and at Rio Janeiro, an account of his isolation and cultivation from the blood and tissues of yellow fever victims, a bacillus which he considered that he had proved to be the specific organism of yellow fever. He had isolated it in 58 per cent. of the cases, and attributed his failure in the remaining number to the fact that the toxin produced so early a death of the organism that no extensive multiplication took place. Death was also attended by the intervention of secondary infections. Heat, moisture, darkness, want of ventilation, are the conditions favorable to the growth of Sanarelli's bacillus; and common moulds are its great protectors, and exert some influence most favorable to its growth.

Surgeon General George M. Sternberg, U. S. N., has recently published* a further account of his bacillus *x*, isolated by him in connection with yellow fever during researches pursued at Havana by the United States yellow fever commission between 1887 and 1889, and which he considers probably identical with the bacillus icteroides of Sanarelli.

In spite of the brilliant and laborious work of Sanarelli, his claim that the bacillus icteroides is the specific organism of yellow fever, cannot be said to have been proved; nor does the bacillus *x*, of Sternberg, satisfy the requirements which must be fulfilled by an organism which claims to be the specific cause of yellow fever. There is a possibility that ultimately both may be proved to be secondary invaders.

* Quoted by Dennis, Annals of Surgery, Dec., 1897.
† Loc. cit.
‡ British Medical Journal, Oct. 3, 1897.

* American Journal of Medical Sciences, Sept., 1897.

The President's recommendation to Congress that a commission be appointed to investigate yellow fever, will, it is to be hoped, result in the early authorization by that body of the appointment of such a commission, made up of men who should ably represent clinical, pathological and bacteriological science. The labors of such a commission ought to result in a broadening of our knowledge of the disease, and of our methods of controlling it, even if the question of the specific organism should remain unsettled.

KOCH'S NEW TUBERCULIN.

On April 1, 1897, Professor Koch published in the *Deutsche Medecinische Wochenschrift* the description of a new and improved tuberculin, the result of several years study and experiment. This new product was believed to have been purified by complicated processes of trituration and filtration of dead bacteria and other impurities to which the severe constitutional reactions and occasional abscess formations resulting from the use of the old tuberculin were thought to have been due. In short, it was supposed to possess the curative properties of the old tuberculin without its irritating effects. Of the new tuberculin Koch claimed to have established by trial on a large number of suitable cases of lupus and early phthisis that its action was much more effective than that of the former product. It was not necessary, in order to produce immunity by the new tuberculin, to administer enough to produce a reaction, and the disagreeable effects of the old tuberculin were, according to his report, not seen with the new

Since the publication of his article, and the simultaneous marketing of the product by a large German chemical establishment, great activity has been displayed in the trial of the new product in German and other European clinics, and it has been also employed to some extent in this country.

The early reports from its use, which were made in July by Schulz, of Bonn, and Fränkel, of Berlin, were not encouraging and failed to confirm the expectations aroused by Koch's paper. In many instances the unpleasant effects, reaction, etc., of the old tuberculin were found to characterize the new. Chills and high fever developed, and the constitutional reaction was fully as severe as under the treatment with the old tuberculin. There was no satisfactory evidence of a definite influence of the treatment upon the course of the disease.

Doutrelepont, of Bonn, reported in August, as a result of trial in fifteen cases, that the new tuberculin had a favorable effect upon lupus, but that great care in the increase of the injections had to be taken in order to avoid undesirable reaction.

Leick tried tuberculin in fifteen cases of pulmonary tuberculosis, and noted improvement in but three.

Herzefeld found improvement to result in but one out of seven cases of laryngeal tuberculosis.

Raudach, physician in charge of a sanitarium for tuberculosis, treated twenty patients with tuberculosis of the lungs, and found the treatment in general to be followed by good results and productive in a number of cases of more rigid improvement than would otherwise have been the case. His patients had the benefit of the most favorable possible conditions for improvement, even if tuberculin had not been employed.

Nencki, Maczewski and Logucki* demonstrated the contamination of the new tuberculin with pyogenic cocci, and found decided reaction and fever resulting from its use.

Malcolm Morris, of London, and Lassar, of Berlin, report favorable results from the use of the new preparation in lupus.

Cutler, of Boston, has reported in the *Journal* marked improvement and gain in weight in two cases treated by him with the new tuberculin. Hewes, of Boston, has treated four cases, two of which gained in strength and spirits under the treatment, but all lost weight, and the subsequent history of these cases was not favorable.

It is a self evident fact that sufficient time has not elapsed to enable a definite opinion to be formed as to the curative effect of the new tuberculin. As to whether its action is in general beneficial, sufficient evidence has not accumulated, and the question must for the present be regarded as undecided.

It has certainly been proved that the new product is not as free from danger of producing reaction as Koch had led us to expect. The complication and delicacy of the procedures necessary for its preparation, render it extremely difficult to secure a uniform product. Although it is to be hoped that good results may be attained by the use of the new tuberculin in the future, patient and long-continued trial will be necessary to settle the question.

THE ROENTGEN RAYS.

During 1897, great activity has been displayed in the perfection of radiographic and fluorescopic apparatus, with the result that

* Presse Medicale, No. 46.

those who are expert in the invention and practical employment of such apparatus are enabled to secure clearer and larger pictures than ever befere. The rays have proved of value in the detection and sometimes the rectification of obscure deformities following fracture and dislocation, in the location of foreign bodies in the body, and in particular in the esophagus and other portions of the gastro-intestinal tract. Foreign bodies in the eye have been successfully located by their use.

The work of their application to the diagnosis of internal disease, particularly of the chest, has been actively pursued during the year, and they have proved of value in the diagnosis of thoracic aneurisms and other tumors, tubercular processes in the lungs, and in accurately mapping out the extent of cardiac enlargements. With regard to proving of service in the early diagnosis of phthisis, it may be said that, in the early stages when the disease is simply a catarrhal bronchitis at the apex, for instance, and no solidification has occurred, the interference with the rays would hardly be sufficient to produce a shadow, although the stethoscope would reveal the presence of fine crackling râles.

It is improbable that the rays will prove of value in the diagnosis of phthisis in the early and therefore most important stages, until the apparatus is perfected so that it will bring out much finer differences in the consistence of tissue than it does at present.

The International Congress of Leprologists in Berlin, October 11th, was productive of important results, in that *Hansen's bacillus* was admitted to be *the cause of leprosy*, and isolation of lepers agreed upon as the most important means for preventing its spread.

Active—Not Inert.

Dr. J. J. Higgins, of 23 Beekman Place, New York, says: "My experience with *Maltzyme* and its combinations has been thoroughly satisfactory. Its fluidity and extremely pleasant taste commend it, and the laboratory test to which I subjected it *showed it to be a "live" article, with an abundance of active diastase*, and *not* inert, as are so many malt preparations. Therapeutically, it is all that has been claimed for it. I have prescribed it in quite a number of suitable cases, and have always found it beneficial. I therefore most cheerfully endorse *Maltzyme*."

Book Notices.

Manual of Gynecology. By HENRY T. BYFORD, M. D., Professor of Gynecology and Clinical Gynecology, College of Physicians and Surgeons of Chicago, etc. *Second Edition, containing 341 Illustrations, many of which are Original.* Philadelphia: P. Blakiston, Son & Co. 1897. Small 8vo. Pp. 596. Cloth, $3.

As compared with the first edition, favorably noticed in this journal about twenty months ago, the present edition is a great improvement. A great many of the old chapters or sections have been rewritten, so as to bring the subjects up to date, and a number of entirely new chapters have been introduced. Trained by his several professorships as to the wants of the student and young practitioner, the author has presented each subject in word and illustration in that manner which brings out the important points in their greatest perspicuity. A novel, yet a most valuable feature, is the incorporation of margin of page notes which enables a glance of the eye to see what is considered in the adjoining paragraph. As a book to help the student to quickly review what ought to be gotten up so as to be prepared for the early examination, it is of great service. Such a book would also make a most excellent text book for the college class room. It is cheap at the slightly advanced price required by the addition of so much new material.

Clinical Text-Book of Surgical Diagnosis and Treatment for Practitioners and Students of Surgery and Medicine. By J. W. MACDONALD, M. D., Professor of the Practice of Surgery in Hamline University, Minneapolis, etc. *With 328 Illustrations.* Philadelphia: W. B. Saunders. 1898. Large 8vo. Pp. 798. Cloth, $5; Half Morocco, $6. Prices *net.*

We cannot help strenuously resisting any effort to make students feel that they are competent to assume the responsibilities of the medical profession until they have first mastered the more elementary branches of medical and surgical science. We want an intelligent, educated profession—not an empirical one. Hence we would not advise this as a text-book for students, for if they fail to appreciate and to learn the principles of etiology, pathology, etc., during their college days, they are apt to undervalue their importance in after-life, and become mere routine surgeons and physicians. But for practitioners who appreciate and know the principles of these more elementary branches of study, this work is invaluable—it is precisely the book they want.

Their duty is to diagnose and to treat diseases and injuries as they occur. To be able to recognize the condition, or disease, enables them to recall the principles of etiology, pathology, etc., and makes them learned surgeons and physicians. For such practitioners, an author could scarcely have written a work that will be more generally appreciated and serviceable than this. It is a well studied and well arranged book on diagnosis and treatment of surgical diseases and conditions. It includes chapters on general examination of patients, on diagnosis and treatment of diseases, deformities and injuries of the vascular and osseous systems; of muscles, tendons and bursæ; of joints, of the digestive system, the genito urinary system; of the head, spine and nerves of the respiratory system; of the neck, breast and the female generative organs; besides chapters on the diagnosis and treatment of syphilis and of tumors, and a concluding chapter on the X (or Röntgen) rays in surgical diagnosis. In short, the book covers every department of surgical practice—so far as diagnosis and detail of treatment are concerned. The general practitioner can no more do without this book than can the surgeon—whether special or general.

Principles of Bacteriology—*A Practical Manual for Students and Physicians.* By A. C. ABBOTT, M. D., Professor of Hygiene and Director of the Laboratory of Hygiene, University of Pennsylvania, Philadelphia. *Fourth Edition, Enlarged and Thoroughly Revised.* Handsome 12mo., 542 pages, 106 Illustrations, of which 19 are Colored. Cloth, $2.75. Philadelphia and New York: Lea Brothers & Co., Publishers.

The fact that this is the fourth large edition since 1891, attests the popularity of this work. This rapid demand for new editions has enabled the author to keep the work thoroughly revised up to date. It is not intended as an exhaustive work, but seeks to supply the wishes of the general practitioner, while it serves, at the same time, the purposes of the college text-book. We know of no work its equal in value within the scope of its design. Improvements and additions have been made in each edition. In this fourth edition, the introduction of illustrated descriptions of the bacillus of bubonic plague, of the bacillus of influenza, and of the micrococcus of gonorrhœa, are all new. These, with a number of other new illustrations relating to descriptive passages in the text, are valuable additions. A good medical dictionary is scarcely more valuable to the student than is Abbott's *Bacteriology* to the doctor.

Diseases of the Eye. By EDWARD NETTLESHIP, F. R. C. S., Ophthalmic Surgeon at St. Thomas Hospital, London, etc. *Revised and Edited by* W. T. HOLMES SPENCER M. A., M. B., F. R. C. S., Ophthalmic Surgeon to Metropolitan Hospital, etc. *Fifth American, from Sixth English Edition. With Supplement on Color-Blindness,* by WILLIAM THOMSON, M. D., Emeritus Professor of Ophthalmology in Jefferson Medical College of Philadelphia. *With 2 Colored Plates and 161 Engravings.* Lea Brothers & Co., Philadelphia and New York. 1897. Cloth. 12mo. Pp. 528. $2.

During the nineteen years this book has been before the profession, it has practically passed through eleven editions—six in England, and each of the five in this country being in reality revision of, with additions to the immediately preceding English edition. The appreciation of each edition is shown by the fact that it is the most generally adopted of all works on ophthalmology as a college text-book in America. The present edition contains a thorough revision of the section on "detection of color-blindness," by Professor Thomson himself—the distinguished author of the most important works and articles on this subject. So that the work as it now stands has a very special value to all examiners of railroad engineers, boat pilots, etc. The general demand for large editions has brought the price of the volume within the reach of the humblest of professional men who have any need whatsoever for an excellent, practical and authoritative work on ophthalmology and allied subjects.

Practical Diagnosis: The Use of Symptoms in the Diagnosis of Disease. *Second Edition, Revised and Enlarged.* By HOBART AMORY HARE, M. D., B. Sc., Professor of Therapeutics in Jefferson Medical College, of Philadelphia; Physician to Jefferson Medical College Hospital, etc. *Illustrated with 201 Engravings and 13 Colored Plates.* Lea Brothers & Co., Philadelphia and New York. 1897. Cloth. 8vo. Pp. 605. $4.75.

It was safe to predict the call for a new edition of this work based upon the rapid exhaustion of the first edition, issued in August, 1896. The doctor must recognize a disease through its symptoms and signs. They have a meaning of their own, and to understand them, the order of their occurrence, etc., is to spell out the disease which we pronounce the patient to have. Many of us doctors do not pronounce correctly because we have not thoroughly understood symptomatology. This book is about the best help to its understanding that we know of. It gives the cause of the symptom and shows how they act and in what they re-

result; it is a "tracer on the track" from effect to cause. The author has availed himself of the opportunity to make some additions to the text, and has added ten engravings of important conditions which materially assist the descriptions. This is an invaluable work to any practitioner, which, with its improved index, he can quickly consult when doubtful as to the import of symptoms he recognizes.

Editorial.

Expert Medical Testimony Must be Given in Illinois.

Dr. J. N. Dixon was called as an *expert witness* in a personal injury case against the city of Springfield. He refused to testify *unless he was first paid a reasonable fee* for the services, claiming that his professional opinion was his own property, and could not be taken away from him except by due process of law, as provided in the State Constitution. Judge Creighton *ruled against him*, and fined him for contempt of court. The court held that this professional knowledge was not property within the meaning of the Constitution, and that, in the exercise of the right of the court to summon witnesses and compel them to testify, no distinction could be made between kinds of knowledge. To allow such a distinction, would defeat the ends of justice.

The Supreme Court of the State of Illinois has recently rendered a decision in the case of *Dixon* vs. *The People*, upholding the finding of Judge Creighton.

Dr. John Herbert Claiborne, Petersburg, Va.,

Responded to an invitation to lecture on *Pneumonia* before the class of Practice of Medicine of the University College of Medicine, Richmond, in December. Beside the attendance of the full class of students, the large amphitheatre was well filled by most of the Faculty and Adjunct Faculty, beside a number of other doctors of the city and of the Legislature now in session. We present the *Lecture* in this number. It more completely covers the ground than any one lecture on the subject we have heard delivered or read in print. No man observes more closely or summarizes more accurately a vast experience than he has done in this lecture. On this subject, he spoke as one having authority.

Mr. W. B. Saunders' New Publications.

This ever wide-awake progressive publisher announces the publication in the next three months of seven of *Lehmann's Medical Hand-Atlases*—of "Internal Medicine and Clinical Diagnosis;" of "Legal Medicine;" of "Operative Surgery;" of "Laryngology;" of "External Diseases of the Eye;" of "Venereal Diseases;" and "Skin Diseases." Other *Atlases* will follow shortly thereafter. Each contains from 50 to 100 colored plates, beside numerous other illustrations in the text. These *Atlases* have been produced by the best artistic and professional talent in the most elegant style, and will be offered at a price heretofore unapproached in cheapness. In fact, the very low price decided on will place these *Atlases* within the reach of even the novice in practice.

The 1898 *Year Book* (Gould), former issues of which have proven so satisfactory, is about ready for issue. Val Valozah & Nisbets' *Diseases of the Stomach*, Keen's *Surgical Complications and Sequels of Typhoid Fever*, Chapin's *Compendium of Insanity*, and (Bang's & Hardaway's) *American Text-Book of Genito-Urinary and Skin Diseases*, will all be issued during February. A number of other excellent books are in preparation for early publication.

Winyah Sanitarium Reports.

We were much interested in a recent report of the work done at this sanitarium at Asheville, N. C., for the treatment of diseases of the lungs and throat. Besides the climatic treatment incident to the location, there is an immense value in systematic control of the patient's mode of life, of his personal hygiene, which cannot be so well secured as by sanitarium control. Dr. Karl Von Ruck also very justly remarks that the results obtained are unequaled in any series of cases equally large, "toward which the use of specific remedies has undoubtedly also contributed." Under the combined advantages referred to in part, he reports the following results of treatment of cases of tuberculosis:

Early Stage.—Of 32 cases treated on an average of three months, 26 recovered, 5 were greatly improved, 1 improved.

Second Stage.—Of 74 cases treated on an average of four months, 26 recovered, 25 were greatly improved, 17 improved.

Third Stage.—Of 76 cases treated on an average of five months, 7 recovered, 26 were greatly improved, 11 improved.

Unive. sity of Chicago and Rush Medical College.

At the convocation of the University of Chicago, January 3d, 1898, the address by President Harper announced that the University trustees, in response to a petition from the trustees of Rush Medical College, voted to enter into affiliation with that college. The consummation is to take place June 1, 1898, provided (1) that the board of trustees of Rush Medical College—most of whom are also members of the Faculty—shall resign, and have their places filled by representative business men of the city of Chicago who have no pecuniary interest in the income of the college. (2) That the requirements for admission to the college be gradually increased until, in the autumn of 1902, only those who have completed the freshman and sophomore years of regular college work shall be admitted. This step is a most significant one in the history of medical education. (3) The present debt of the college (which amounts to $71,000) must be paid before affiliation takes place. It will be the aim of the new trustees to develop the work of the medical college along university lines. In the history of Rush College, with every increased requirement, the number of students has regularly increased. It is of course understood that "affiliation" does not mean organic union. It will, however, give to the university a general supervision of the educational policy of the college. The trustees of the university assume no financial responsibility in connection with college We are glad to note the step taken to elevate the standards of preliminary requirements, and hope other medical schools of the country may be induced to keep pace with the advance.

Virginia and North Carolina Tidewater Medical Association.

The physicians of Norfolk, Portsmouth, Berkley, Suffolk, Smithfield, Hampton, Newport News, Va., and Edenton and Elizabeth City, N. C., and the adjacent counties in Virginia and North Carolina, will meet in the rooms of the Young Men's Christian Association, 199–203 Main street, Norfolk, Va., at 12 o'clock, Thursday next, January 20th, for the purpose of organizing a *Tidewater Medical Association.* It will not in any way conflict with the State Medical Society of either Virginia or North Carolina. As it is specially desirable to have the first meeting largely attended and made interesting, etc., all who can be present, especially if they have papers to contribute, should promptly notify Dr. J. F. Lynch, Columbia Building, Norfolk, Va. The Atlantic Hotel, the Gladstone and Hotel Norfolk, offer reduced rates to visiting physicians, and those who may desire to visit Virginia Beach, will be given free transportation. The Mayor of Norfolk, Hon. W. R. Mayo, will welcome the visitors. The promoters deserve special commendation for securing the promise of the following papers: *Persistent Alkalinuria*, by Dr. Geo. K. Vanderslice, Phoebus, Va.; *Modern Surgery of the Rectum*, by Dr. Southgate Leigh, of Norfolk, Va.; *Typhoid Fever and Its Treatment*, by Dr. Thomas M. Riddick, of Woodville, N. C; *Case of Penetrating Gunshot Wound of the Abdomen—Remarks*, by Dr. Kirkland Ruffin, of Norfolk, Va.; *Gonorrhœal Ophthalmia*, by Dr. A. E. Wilson, of Norfolk, Va.; *Wet Dressing in Minor Surgery*, by Dr. Lucien Loftan, of Emporia, Va.; *Our Recent Work with the X-Ray*, by Dr. Southgate Leigh and Mr. M. A. Angelasto, of Norfolk, Va.; *Chronic Laryngitis—Its Causes and Results*, by Dr. J. F. Woodward, of Norfolk, Va.; and *The Nausea and Vomiting of Pregnancy*, by Dr. F. H. Hancock, of Pinner's Point, Va. No doubt other titles will be announced before the session adjourns. We wish the Tidewater Medical Association may prove of such great success and benefit as to stimulate the organization of like societies in all parts of the South especially.

Dr. R. Harvey Reed,

Formerly of Columbus, Ohio, and editor of the *Railway Journal* of that city, has moved to Rock Springs, Wyoming, to become Superintendent and Surgeon-in-charge of the Wyoming General Hospital. This hospital, with eighty beds, will be ready for patients about April 1st, 1898. Wyoming is one of the few States of the Union that has erected and maintains a medical and surgical hospital.

Diagnostic Symptom of Cancer Obstructing the Bowels.

The *International Journal of Surgery*, January, 1898, says: "When chronic intestinal obstruction is caused by carcinoma, wherever located, there is, practically, *always an intermittent pain*, of a paroxysmal nature, situated in the region of the umbilicus."

Bromidia has been given with success as a remedy for insomnia, especially where produced by excessive study or mental work."

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Original Communications.

QUININ NOT A SPECIFIC IN MALARIA, EXCLUDING THE SIMPLE INTERMITTENTS.*

By J. G. VAN MARTER, JR., M. D., Savannah, Ga.

There is a vast difference between the action of quinin in intermittent malarial and in the continued malarial fevers,—the *malaria subcontinua typhoidea*" of the Roman school, the malarial cachexia and the debatable "terra incognita" of malarial toxæmias seen in hot paludal countries.

This paper should have been preceded by discussions on the etiology, pathology and clinical varieties of malarial toxæmias as seen in this climate. This would have enabled me to classify the action of quinin according to the pathology and clinical picture of each case. Such a discussion is eminently fitting and proper in our locality, for it is high time that a protest be issued against the general acceptance of the views of Osler, Thayer and other Northern clinicians on the specificity of quinin.

While Thayer, in his recent work on *Malarial Fevers*, distinguishes three types of malarial parasites—the tertian, the quartan and the parasite of æstivo-autumnal fever—I believe it safe to assert that there is more than one variety of parasite in æstivo-autumnal malaria, and that these parasites have an entirely different action as regards the manufacture of toxins.

Under quinin, the forms of the ordinary cycle of development disappear rapidly from the peripheral circulation, but the crescentic and ovoid bodies remain a much longer time, sometimes even for months.

I shall confine myself as closely as possible to *the action of quinin*, and we shall see whether quinin is a true specific or preventive of the various forms of malaria with which I have been acquainted, both here and in Rome (Italy.)

Osler, Thayer, Councilman and others in the North, correctly say that quinin is a specific against the malarial parasite and the malarias which have come under their observation; but as they have not studied malaria in its true home, in a climate fitted for the development of the most virulent parasites, with infections occurring the year round, they are not fitted, by either experience or observation, to settle the question as regards the action of quinin in the malaria that we see south of Charleston and along the Gulf Coast.

In the first place, is *quinin the best preventive of infection?* It is so stated by Northern, English, French and German authorities; but is this the case with those who live in the regions infested by the severer varieties of malaria? No, *quinin cannot be taken indefinitely the year round* in doses sufficient to kill the parasite as fast as it develops, and various peoples have adopted different measures to prevent infection, which prove *better for long continued use.*

In some parts of Italy a strong decoction of fresh lemons will prevent infection; in other parts the continual use of small doses of arsenious acid acts well; while in India, Assam and Cochin China, the natives working in the rice fields and subject constantly to severe infection, find that opium will prevent malaria where quinin fails. This is very suggestive, being far better evidence upon which to base conclusions than the mere hypotheses of Northern observers; or the passing observations of travelers, who can take quinin for a few weeks or months.

Now, coming to the *treatment of malaria* (I am speaking of *the severe infections*, leaving out intermittent fevers), *is quinin a true specific?* There are cases innumerable in which the patient would die did we not add other potent drugs to quinin, or for a time at least place more reliance on other drugs than quinin. Although a true specific against the plasmodium of tertian and quartan fever, it is not a specific

* Read before the Clinical Society of St. James Dispensary, Savannah, Ga., January 1, 1898. (For Discussion, see Proceedings of this Society, in this issue.)

or antidote to the parasite of the more severe continued malarias and the toxins generated by them. When the microscope has shown the disease to be malaria in any form, quinin is a specific in all patients with intermissions or with marked remissions; not so, however, where the fever is continued, or in those malarias with but little temperature.

In continued fevers toward the last stages, marked remissions are apt to occur (in mild cases); here *again quinin becomes a specific.* There are, however, exceptions, for it is not uncommon to see a patient with intermittent fever, to whom quinin has been properly administered, have a distinct malarial paroxysm with the ears ringing from quinin.

Dr. Plehn, a German physician, in the Cameroons on the west coast of Africa, which is probably the most malarious region on earth, has observed that quinin is a good preventive, and the best treatment in newcomers and those not long resident in that region; but in spite of 5 grains per diem, practically *all* foreigners get the fever, and the large majority die of it sooner or later. In all these cases (with the exception of the hæmaturias), quinin is given in enormous doses, *with calomel* (which, by the way, is never omitted) and stimulants; but while the actual paroxysm is overcome by quinin (if the case be seen in time, or not too malignant), the spleen remains large, *the crescents remain in the blood,* and malarial anæmia sets in.

What does this observation show?

1st. That quinin is a specific against the protozoön of tertian or quartan malaria

2d. That it inhibits, for a time, the development of the protozoön of pernicious malaria, but does not kill it; nor does it, even with quinin constantly taken, prevent its development, *every time the patient catches cold,* or is exposed to a particularly severe contagion.

3d. That quinin alone has no action on the toxin produced by grave malarias over which calomel has twice the potency (at least in full physiological doses).

4th. That quinin even as a prophylactic cannot be indefinitely taken.

5th That quinin has no effect whatsoever on malarial anæmia (really a chronic toxæmia).

Another very interesting form of protozal malaria, *beri-beri,* is not cured by quinin, although slightly benefited for a time, *if the febrile manifestations are sharp.* In this malignant form of disease, the pigment bodies seen in our malarias are deposited in the brain and other nerve tissues; and these pigmented bodies—either before or after degeneration—produce a toxin absolutely unaffected by quinin. In the recent epidemic at the Insane Hospital, Tuscaloosa, Ala., reported by Dr. Bondurant, *N. Y. Med. Jour.*, it is stated that quinin failed in every case to do any good. It is to be regretted that special work on the etiology was not done to establish the direct relationship of the sporozoöns supposed to cause beri-beri.

Still another variety (more correctly complication) of malaria, *hæmoglobinuria,* is made worse by quinin. I believe that the great majority of those practicing in countries where severe malarias exist will confirm this observation. Thayer admits that quinin never shortens an attack of hæmoglobinuria, but says it prevents a recurrence—this latter being an assertion without the warrant of experience, and I know it to be wrong. Quinin is a *frequent cause* of hæmoglobinuria, and after one attack, if quinin be taken, *it is apt to cause the condition which Thayer says it will prevent.*

In my experience, the cases of malaria (as proven by the microscope), in which quinin failed to cure—did not act as a specific—have been confined to two types. First, and most common, severe malaria subcontinua typhoidea (an æstivo-autumnal form) where the fever ran along for days with very slight remissions; and, second, those irregular forms, sometimes seen, where, with undoubted malaria, the fever of a continued type was low, seldom above 102°. The symptoms presented were those of profound toxæmia resembling uræmia:—suppression of urine, jaundice, delirium, subsultus, without chills or paroxysms of any kind.

There are cases of both types, just mentioned, that would surely die did we not add other drugs to quinin, and a large proportion of cases for a time at least are better off without it. We must recognize that in these types we have a toxæmia to deal with, and it is just this toxæmia which I claim is unaffected by quinin.

In treating these very severe malarial toxæmias, as we see them on plantations or in the country just out of town, or in the suburbs, or in river sailors, we are placed at great disadvantage as regards doing the best possible for our patients. If these patients could be moved away from an atmosphere where constant reinfection is taking place, and taken to a hospital like the Johns Hopkins, where even the poor can obtain luxuries and be kept under skilled trained nursing, perhaps in *such* cases quinin might help *if* proper eliminative treatment were added (for it would not without it). But how is it where the patient is in a misera-

ble hut, or poor farm-house, not a bath-tub in miles, no clean bed linen, no decent drinkiug water, no chance of proper food or good nursing, and an unalterable opposition to hospitals in general? It is on such cases that we have to practice, and it is only amongst such that we see most of our severe malarias. If quinin were a specific, they would all be cured before we ever saw them. They all take plenty of quinin, dissolved in water. and with it calomel.

I have tried, in the severer cases, *quinin intra-venously*, and must say that it does act well; it is the only way to give it in the severest forms, but it does not shorten the course of the fever; it seldom breaks it up as it should if it were a specific.

It is beyond the scope of this paper to relate my experiences this summer and fall in the treatment of some severe cases. I am preparing a paper on the results obtained by using the formula used by Woodbridge and others in the treatment of typhoid fever. I was very much struck by the uniformly happy results obtained, and in many instances never used quinin from beginning to end of the fever—commencing it only in convalescence in two-grain doses three times a day. If practitioners around Savannah are not competent to speak on the treatment of malaria, who could be?

Quinin is seldom properly administered. It is not the amount, but the way you give it that counts. Give it with an acid if the stomach will stand it, or else in the effervescing form recommended by Burney Yeo.* I quote from him as follows:

"We have found the efficacy of quinin in febrile states very much influenced by its mode of administration. If we prescribe quinin dissolved in citric acid, and given in effervescence by adding it to an alkaline mixture, doses of two or three grains exert a powerful antipyretic influence far greater than that obtained by the same quantity of quinin given in the dry state. We have seen abundant reason to believe that in infective fevers, if quinin be given in saline solutions, it is the most active and reliable antitoxin we at present possess."

A strong decoction of lemon in the early morning is a very useful remedy.

A preparation for giving quinin by the mouth, of particular efficacy in many of the severe varieties, is "Warburg's tincture," and it is a most excellent medicine.

One very strange observation that I have made is worth relating. I had a patient with occasional severe attacks of malaria, who never seemed to get the physiological effects of quinin; in other words, he never had ringing in the ears. Thinking that the quinin was not being absorbed properly, although I had given it in various ways, I gave him several hypodermics by the method I shall further on describe, and failing in this, I put him on big doses of the Warburg's tincture, and strange to say, *one ounce made his ears ring.* This extraordinary phenomenon has often been a source of perplexity to me, and, in reasoning about it, have come to the conclusion that something in this compound may act, in a slight measure, as an antitoxin, or in some way so modify the chemistry of the blood, as well as the activity of the glandular and eliminative system, *as to give quinin a chance.* Is it not true, perhaps, that quinin meets with resistance in the blood which is, in some way, modified by that complicated mixture—Warburg's tincture?

This is a very interesting subject, upon which much remains to be known.

Warburg's tincture should be given, as recommended by the experienced practitioners in India, after a brisk purge, undiluted, in doses of half ounce, all drinks withheld, repeated in three hours, and the patient carefully rolled up in blankets to encourage the profuse aromatic perspiration which follows. It is one of the most powerful diaphoretics known; it is also diuretic, stimulant, and purgative. I always follow its use by opium and small doses of whiskey; never omit the opium, which I believe acts most happily. Recently, I have used the powdered Warburg's tincture, put up in elastic capsules by Parke, Davis & Co., an elegant preparation, far more agreeable to the patient than the liquid; but I am far from convinced that it compares to the liquid preparations obtainable in England, for our American preparations of the liquid do not act as well as the English.

Quinin by the rectum I do not favor. Inunction is a very uncertain way of giving it; but of the hypodermic method I am a great advocate. In giving quinin subcutaneously, let me urge you to use it in free solution, and not stick to your small hypodermic syringes. I am now using what is usually called an "antitoxin" syringe, with a 16 c. c, capacity. By making a very dilute solution more quinin is promptly absorbed, and there is absolutely no danger of abscess or painful inflammations. You should not use an acid to dissolve the quinin, as is advised by most writers, for it is

* Burney Yeo, *Clinical Therapeutics*, Vol. II, page 637.

not necessary, and is very painful. The dihydrochlorate and hydrobromate of quinin are the two salts best adapted for such use, and also for intra-venous injection. The water should be hot, about 100° F., and the needle sharp. Whenever, in any case of malaria, the gastric symptoms are marked, and this is frequent, use the hypodermic method in the commencement. You are then *sure* that the patient is getting all the quinin you want him to have promptly and without additional burdens on the stomach. I have never seen but two abscesses (and they were not in my practice) from hypodermic injections of quinin; one due to an excess of acid, the other to a filthy syringe. Do not inject in the arms. The belly wall is a very handy place to inject your solutions, and never bothers the patient like it does in the thighs or back. Use from 8 to 10 grains at each injection, and if the quinin does not work promptly, do not pin too much faith in it, nor that absurdity called the "therapeutic test"—a relic of barbarity.

I find a good deal of hesitation amongst many physicians as to the use of intra-venous injections of quinin. They fear its difficulty, slipping up in asepsis or admitting air in the veins—all points easily avoided and overcome. Having been brought up, you might say, on this method of using quinin, and having seen its development in the Santo Spirito Hospital, Rome, in the service of Baccelli, I have had very good opportunities of seeing it practiced.

We get by an ordinary injection what, for the blood, is a very large amount (15 grains), and I honestly believe that if we could see our cases early enough, all cases of pernicious malaria of a fulminating type could be saved. But, alas! we seldom see them early, for such cases come in town from the country "in extremis"—this, at least, is the common experience in Rome. Once the plasmodia have had time to fully manufacture their toxin, it is too late to rely on quinin. As, however, I have seen several cases recover after intra-venous injections in the last stages, you may well ask how it is that they did not die too. I attribute a good share of *some* (not all) the recoveries to the happy effects of quinin, but some are due to the salt solution injected at the same time. It has never yet been done by control experiments, but I have no doubt that if you gave some of these cases a large intra venous injection of normal salt solution, say 20 ounces, and *no* quinin, you would get *as good results as you could by quinin.* I know, from experience, that this will start secretion in the kidneys, the only channel by which the poison escapes in this condition. Any observing man whose misfortune it has been to have a number of severe pernicious malaria cases in his practice, will agree with me that *if you can* set up diuresis, sweating, and purging, while vigorously stimulating the patient, he is apt to live—quinin or no quinin; on the other hand, without this, but all the quinin you please, the patient will die. This is the common experience with every poison, from malaria to rattlesnake bite.

Let us not say a thing is so because the books written by great teachers say it is so. The last words have not yet been spoken on the specific action of quinin in malaria (in our climate), and *the* book on malaria has not yet been written.

I feel confident that many will agree with my views on this subject.

To summarize briefly, my conclusions are:

1. As a preventive, quinin will not do for those who are compelled to live indefinitely in a severe malarial climate; in time, it will act as a vaso motor poison.

2. Quinin acts nearly as a specific in all malarial fevers characterized by intermissions or well marked remissions, but fails in the continued fevers, those with typhoid-like symptoms, those malarias without temperature, and the cachexias and anemias due to malaria.

3. Proving thus that quinin is a poison to the plasmodium itself, but useless against the toxin manufactured by it.

4. Warburg's tincture, in the last condition, has an action, not yet understood, on the toxin (or the eliminative system), by which the system is put in condition to benefit by quinin.

5. Quinin should never be used in hæmoglobinuria, or given subsequently, to one who has suffered from it—being liable to bring about a recurrence of the condition.

6. Only those living in regions of severe malarias can become competent to settle these questions *pro or con.*

For Colds.

Therapeutische Monathepte gives Wunche's prescription for colds, which, in the early stages, is said to act almost specifically. ℞ Menthol, 1 to 2 parts, chloroform 20 parts. Misce. S: Pour four to six drops in palm of hand; rub it quickly with palm of the other hand, and then hold both hands, as a cone, over nose and mouth—inhaling deeply. Repeat two or three times daily, if needed.

THYROID THERAPY IN CONNECTION WITH SOME DISEASES OF NUTRITION.*

By JOHN W. SHAW, M. D., Washington, D. C.

With some hesitancy I decided to bring before you a short article concerning my limited experience with thyroid gland and its products as a therapeutic agent. I say hesitancy, for the reason that numerous charlatans have so disgusted the profession with their cerebrine for the brain, cardiene for the heart, and so on through the entire list of organs, that anything which suggests such nonsense would seem distasteful to us. However, I think we will all agree that the thyroid remedy has risen from the above category, and is rapidly making for itself a well-deserved place in the list of useful medicines.

I have never seen any satisfactory scientific reasoning as to how and why this product has such a pronounced effect on certain diseases; nor do I intend to theorize much upon that point, except to say that as physicians we know there are certain organs which are called ductless glands, whose functions are still somewhat obscure; also, that removal or diseases of these glands is followed by disturbance of nutrition through the body.

Clinical observation bears this out; but just how diseases of the suprarenal capsules produce bronzing of the skin, loss of digestive power and vomiting, I am not able to say; or as other experimenters have found that upon removal of the thyroid gland, myxœdema was produced, with its progressive failure of vitality.

If the above is true, then it is certain that these glands form material which in some way alter the nutritive functions and govern or modify metabolism — the *modus operandi* of which I am compelled to leave until we have further scientific investigation. Suffice it to say, I can give only the details of my three cases and allow you to draw your own conclusions.

My *first use* of the drug was about four months ago in a *case of corpulency*. I then tried the preparation called *iodythyrine*, which is supposed to contain the active principle of the thyroid gland of the sheep. This preparation I gave to Lucy S., 28 years old Her weight, at that time, was 238 pounds; she had already tried all the known remedies for the reduction of corpulency without apparent effect upon her adipose. I gave five grain tablets by the mouth, three times a day, for the first week; and, with diet and daily habits remaining the same, I was much surprised at the end of the seven days to find she had lost exactly ten pounds. Having noticed no ill effects from the use of the medicine, I increased the dose to one tablet every three hours, or about five per day. At the end of the second day, I was called to her house and found her suffering from severe palpitation, shortness of breath, nausea and vomiting. I was not quite sure that this trouble was due to the immediate effects of the medicine, but I stopped the drug and gave her a stimulating hypodermic. After several hours she seemed as well as ever. I then ordered her to go back to three tablets per day, with the result that at the end of the second week, she weighed 215 pounds, or a loss of six pounds for the second week. At the end of the third week the weight remained about the same, 215 pounds; four tablets a day were then given, and during the entire week she complained of uneasiness about the stomach, but no palpitation. At the end of the fourth week, under the increased dosage, I found she had gained over four pounds. She became discouraged, and in the meantime moved to another part of the city, after which I lost trace of her.

The *next case* upon which I had an opportunity to try this preparation was one of *exopthalmic goitre*. This disease may not be claimed by all to be one of disturbed nutrition, as manifested through the thyroid secretion, and I am not at present prepared to say that it is. But from the following case it would seem probable:

The patient, Mary K., 45 years old, very anemic, with a distinct cardiac murmur over mitral valves, which I diagnosed as organic disease. She took five grains of *iodythyrine* very comfortably for several days, after which the shortness of breath she had already complained of seemed to increase. A day later her pulse became so weak and rapid, I was compelled to withdraw the medicine. When I commenced a second time, the same unpleasant symptoms arose, and I thought best to discontinue its use. Since then I have seen it stated that the drug does harm in exophthalmic goitre, for the reason that the cause of the symptoms are probably due to the excessive development of the thyroid secretion. Whether the above is true or not, the case did not do well on this treatment, and I was compelled to abandon it for the older methods. This single experiment would tend to show that if the excessive thyroid secretion does not originate the disease, it certainly intensifies the symptoms

*Read at a meeting of the Medical and Surgical Society of the District of Columbia, December 2, 1897.

after it has become established—although single case experiments must be regarded as of very limited value.

I next tried the *pulverized thyroid** upon a *gouty plethoric* old lady. Her weight and age are subjects too tender for her to converse upon. So I will approximate the figures at about 200 for weight and 75 for age. She promised me, however, if I could reduce her to 170 pounds, she would give me exact figures. Unfortunately, up to this time I have not received the figures. I can only add that she has lost from three to four pounds a week for the four weeks she has been under treatment. She has had no bad symptoms, and certainly gets around more comfortably than heretofore.

With these very few and somewhat unsatisfactory cases, I will add, in conclusion, that I believe some preparation of thyroid gland, whether it be the so-called active principle, glycerine extract or dessicated gland, should be tried with a fair hope of success in cases of obesity, and if reports are true, it seems to be almost as specific for myxœdema.

I have also seen reports of numerous cures of *ordinary goitre.* The last statement seems to be antagonistic to my experience, as far as the exophthalmic variety is concerned; also as to the theory that exopthalmic goitre is due to hypersecretion of the gland.

But the most surprising thing to me is the apparent efficiency of these preparations when given by the stomach. Hypodermic medication would seem to be the only way to insure their entrance into the circulation, because of the probability of their alteration by the gastric and intestinal ferments. Yet they seem to contain some agent not detrimentally affected by the digestive juices. If it were possible to procure an extract which could be used hypodermically without fear of abscess, I believe those who are interested in experimental medicine will have a large and fertile field, not only in obesity, goitre and myxœdema, but in many other diseases where the ductless glands so mysteriously disturb nutrition.

1453 *Rhode Island Avenue.*

*Prepared by Parke, Davis & Co., Detroit, Mich.

Angier's Petroleum Emulsion

Is, according to Dr J. D. Albright, Pottsville, Pa., "antiseptic, antispasmodic, stimulant, diaphoretic, nutrient and expectorant." It is combined with hypophosphites in palatable form. Most excellent results are reported from its use.

OPHTHALMIC CLINICAL NOTES.

By DAVID WEBSTER, M. D., New York.

CASE I.—*Leucoma adherens with complications improved by iridectomy.*—Peter McG., æt. 23, was admitted to the Manhattan Eye and Ear Hospital *October 22nd*, 1890. He gave a history of having been poisoned with poison ivy when he was six years old. This caused a violent inflammation in both eyes, which resulted in an almost total loss of sight. Three years later, when he was nine years old, a well known New York ophthalmic surgeon performed an operation on his right eye, but without restoring any useful vision. The left eye had never been operated on. When he came under my observation, the right eye, though retaining perception of light, presented total leucoma of the cornea, with greatly diminished tension. With the left, which presented a large opacity of the lower portion of the *cornea* and *synechia anterior*, he could count fingers at six inches. It was hoped, though the tension of this eye was *minus*, that an artificial pupil behind the clearest portion of the cornea would improve the sight. Accordingly, the eye having been put under the effects of cocaine, and the usual antiseptic precautions having been taken, an iridectomy was performed, making an artificial pupil upwards and inwards behind the most transparent portion of the cornea. A bandage was applied, and the patient was put to bed.

October 24th.—No reaction, pupil clear, anterior chamber reformed, cleansed eye, dropped in atropine and reapplied bandage.

October 25th.—Atropine three times a day—eye kept closed by means of absorbent cotton and black patch.

October 29th.—Patient counts fingers at one foot. That his vision is not more improved is explained by the fact that he has posterior polar cataract, floating membranes in the vitreous, and atrophy of the optic nerve. This could not be ascertained until after the iridectomy had made an examination of the interior of the eye with the ophthalmoscope possible. Discharged.

CASE II.—*Phthisis bulbi from injury—sympathetic inflammation of fellow eye—vision improved by iridectomy.*—Henry D., æt. 40, came under my care at the hospital November 5th, 1890. Four years previously he was struck in the right eye by a stick of wood. Inflammation set in, and the eye was lost in three or four months. About three years after the injury, the sight of the left eye began to grow dim and smoky, and once in a while a darting pain

ran through it. It got worse and worse until two months ago, when he had to give up work on account of loss of sight to such an extent that he could not "get around." He has had some "drops internally," but no other treatment. When I saw him, the right eye was shrunken and without perception of light.

In the left eye, the iris was glued to the anterior capsule of the lens, and there was only perception of light with good projection. With the ophthalmoscope there was only a faint reflex from the fundus to be seen.

Ether was administered, the atrophied right eyeball was enucleated, and a broad, smooth iridectomy upwards was performed upon the left. A bandage was applied, and the patient was put to bed.

November 7th.—No pain nor inflammatory reaction. To have atropine in left eye three times a day.

November 11th.—Eye quiet. Some blood in anterior chamber.

November 15th.—Most of the blood has been absorbed from the anterior chamber.

November 19th.—V. $=\frac{4}{200}$. Patient can see to go about alone. Discharged.

In this case there was considerable danger that an iridectomy would light up the inflammation that had mostly subsided, and result, possibly, in atrophy of the globe with loss of perception of light. The patient was made acquainted with the risk he ran, and knowing that useful vision could be restored in no other way, decided to take his chances. The result quite equalled our expectations.

Case III.—*Convergent strabismus corrected by tenotomy and glasses.*—Maggie S., æt. 24, was admitted to the hospital October 31st, 1890. She had convergent squint, which was said to have existed from babyhood. She had had a tenotomy of the left internus, at the age of 21, by a New York ophthalmic surgeon, which straightened the eye for a time, but it soon turned in again. *No* glasses were prescribed The patient insists that she saw better with the right eye than with the left before the operation. The left is now the better eye, and she fixes with it while the right turns in. A tenotomy of the right internus was performed, under cocaine, in the usual way.

November 1st.—No inflammatory reaction; slight convergence. Glasses were prescribed correcting the total hypermetropia.

November 2nd.—Result parallelism. Discharged with exhortation to wear the glasses all the time.

It is to be regretted that the vision and refraction were not recorded so as to be accessible in this report.

Case IV.—*Divergent strabismus remedied by tenotomy of externi with converging suture.*—Augustus K., æt. 22, came to my clinic at the Manhattan Eye and Ear Hospital on November 9th, 1890. He had a divergent squint of about a quarter of an inch of either eye upon fixing with the other. Upon testing him we found—

R. V. $=\frac{20}{50}$; $\frac{20}{40}$ with + 2.25D. ⌒ + 1.25D. c. axis 60°.

L. V. $=\frac{20}{50}$; $\frac{20}{40}$ with + 2.50D. ⌒ + 2.50D. c. axis 100°.

Ophthalmic examination showed normal media and fundi.

He gave the following history: Having been the subject of convergent squint from childhood, a tenotomy of his *interni* had been performed when he was fifteen years old. As this only partially corrected his squint, a second tenotomy of the same muscles had been performed when he was seventeen. The result of this was an over-correction and the condition in which we found him.

He was admitted to the hospital on *November 12th*, and operated upon as follows: The eyes were cocainized and washed with a saturated solution of boric acid. Both *externi* were then thoroughly severed from their scleral attachments and from the superjacent conjunctiva with scissors. A delicate curved needle, armed with a thread of fine strong black silk, was then passed through the conjunctiva of one eye, close to the nasal margin of the cornea, in the horizontal meridian, taking a good bite so that it would not be likely to tear out. The needle was then carried across to the other eye and caused to take a similar bite in its conjunctiva in a corresponding position. The needle was then removed from the thread, and the latter was tied across the nose sufficiently tight to cause the eyes to converge about an eighth of an inch A little wad of cotton was placed under the ligature upon the nose to keep it from cutting into the latter. The eyes were cleansed and bandaged, and the patient was put to bed.

November 13th.—Bandage removed; ligature across the nose taken out, leaving slight apparent divergence.

November 14th.—With red glass over one eye homonymous diplopia 12°; without a colored glass over one eye he has no diplopia. This test showing a tendency to divergence, the glasses correcting his compound hypermetropic astigmatism were ordered to be worn all the time.

November 18th.—With his glasses, esophoria 15°; without them, 30°.

November 19th.—Discharged, having binocular single vision and not complaining of any discomfort.

CASE V.—*Burn of lime, both eyes.*—William D., æt. 31, a plasterer, came to the hospital *November 19th*, 1890, with lime burn of both eyes, the lime having been thrown into them an hour and a half previously by a fellow-workman. He had an old symblepharon of the temporal third of his left lower lid from a burn of lime two years previously.

Some lime was found in the conjunctival cul-de-sacs of both eyes, both above and below, and some on the cornea of the right eye. Both eyeballs were very red, the right cornea was hazy, and there was an ulcer, about an eighth of an inch in diameter, of the upper palpebral conjunctiva of the left eye at about its middle. There was smarting, pain, photophobia, and lachrymation. The lime was carefully removed from both eyes by means of cotton twisted about the end of a cotton holder. The patient was put to bed, and atropine in castor oil (4 gr. ad. ℥j) was dropped into both eyes every three hours. Iced cloths were applied.

November 22nd.—Redness of eyeballs lessening, cornea clearing, ulcer of upper palpebral conjunctiva healing. To continue atropine and oil, and have the iced cloths changed less frequently.

November 25th.—Very much improved. To have the iced cloths changed just often enough to keep the eyes cool.

November 29th.—The right eye is still a little red and sensitive to light. The left eye is about well. The ulcer on the inside of the upper lid about healed. The pupils are evenly and widely dilated. The haziness of the right cornea is mostly gone. Discharged.

Round Worm Cause of Appendicitis.

During a clinic in the surgical amphitheater of the University College of Medicine, Richmond, Va., held January 8, 1898, for Dr. Hunter McGuire, Dr. Joseph Price, of Philadelphia, exhibited an appendix which he had removed from a patient the day before because of appendicitis. In the appendix was a full-sized round worm (ascaris lumbricoides) which had evidently been a cause of the appendicitis. This case was unique in his practice in that it was the only time he had ever found a worm in the appendix. He has, however, many times found all sorts of foreign bodies, as seed, etc., in the appendices he has removed.

POST-NASAL ADENOIDS.*

By JOHNSON ELIOT, M. D., Washington, D. C.

In a recent paper on the subject of "Facial Manifestations of Diseases," read before this Society†, the writer does not think sufficient stress was laid upon the *characteristic expression* of the patient who suffers from adenoids located in the naso-pharyngeal space. It was this that suggested the present title, and I will endeavor not only to bring this more prominently to the front, but in general treat of adenoid growths—especially those of the vault of the pharynx—and direct attention of the general practitioner to a much-neglected subject.

The naso-pharyngeal space may be described as quadrilateral, lying behind the posterior nares and oral cavity.

The boundaries are: Above, the basilar process of the occipital and a portion of the body of the sphenoid bone; behind, the bodies of the vertebræ, including the arch of the atlas; in front, the vomer and opening of the posterior nares; below, a horizontal plane opposite the free edge of the soft palate; on either side, by the cartilage of the Eustachian tubes which open into this space. The mucous membrane which lines the space is closely applied to the underlying structures, and is continuous with that of the communicating passages; it contains an abundance of conglomerate or follicular glands, and is covered by ciliated or columnar epithelium.

The conglomerate glands are clustered about the posterior border of the Eustachian tubes and on the pharyngeal surface of the soft palate. The follicular are collected in the vault, where they form the pharyngeal or tonsil of Luschka. With the exception of the vascular and nerve supply, the underlying tissues will be passed over without reference as not strictly germain to the subject.

Post-nasal adenoids, commonly known as "adenoid vegetations," are simply hypertrophies of the normal lymphatic or follicular glands found in this region. In structure, they resemble closely hypertrophies of the faucial tonsils, with which they are often associated, but on account of the protected position, seldom acquire such firmness. They contain great numbers of lymph corpuscles, and in comparison with the faucial hypertrophies, only a small quantity of fibrous connective

*Read at a meeting of the Medical and Surgical Society of the District of Columbia, December 2, 1897.

†J. D. Morgan, M. D., *Virginia Medical Semi-Monthly*, Dec. 24, 1897.

tissue. These growths are multiple, uneven to the touch and lobed.

Different varieties are described, but all may be placed in two classes—*the stalactate or pendant* and *those having broad bases.* Either class of growth may be individual. The non-pendant variety is ordinarily of firmer consistence and smoother, with irregular contour.

Post-nasal adenoids are almost invariably seen in childhood; most of Meyer's cases occurred between five and ten years, while Bosworth's were in childhood a little older. Occasionally I see the growth in adults, when it is generally sessile.

There is a tendency in the young to a morbid development of epithelial and lymphatic structures, especially those of the so-called "scrofulous diathesis." Congenital syphilis is a causative factor, and many lay stress upon heredity. They are met with in all climates, and I agree with Meyer, that damp northern latitudes predispose strongly to their development.

It is but just to add that Chappell, in an examination of two thousand New York school children, found 3 per cent. afflicted; while Meyer's statistics, made previously of one thousand scholars in Copenhagen, showed but 1 per cent. Harrison Allen, in twenty-one healthy Indian girls at the Lincoln Institute, Pennsylvania, found seven with adenoids, or 33 per cent,

Chronic inflammation of the space caused by repeated colds and some of the exanthemata, as measles, scarlet fever or diphtheria, are immediate causes.

The sexes are about evenly divided; my case-book shows slight excess of females.

The symptoms of post nasal adenoids are numerous. Often they are detected in the apparently healthy; we have nasal obstruction, post-nasal mucus or muco purulent discharges, at times slight epistaxis and the various symptoms of hypertrophic nasal catarrh, with which it is generally associated.

In many cases, *the location of the growth* is of more importance than its size, because of interference with the function of neighboring organs, as in certain affections of the ear when there is a crowding upon or occlusion of the Eustachian tubes

The facial expression to which reference has been made, is so characteristic that with a little experience we can at a glance frequently tell what is the trouble.

The portrait of Canova, by himself in the Vatican, is pointed out as an instance showing adenoid growth. Additional weight is given by his pupils, who state that he was quite deaf.

Adenoids cause the sufferer to be a *mouth-breather.* The mouth is kept open, the lower jaw becomes heavy in appearance and rounded, the cheek bones lose their prominence, the bridge of the nose becomes broader and flattened, and there is a vacant idiotic stare. The eyebrows are arched, the forehead corrugated, and the naso-labial fold obliterated.

Changes take place *in the mouth cavity.* The hard palate becomes high-pitched, the superior dental arch contracted, causing the upper jaw to become V-shaped. On account of the great vaulting of the hard palate, the *nasal septum* (composed of the vomer and the perpendicular plate of the ethmoid) *is crowded and pushed to either side,* thus increasing the nasal occlusion. The teeth of the superior maxilla are slightly misplaced or misdirected. This description is of an extreme case; there are many gradations.

The patient presents a doleful picture, particularly when we add the *thoracic deformity.* Anteriorly, the ribs are widely separated and prominent; the angle formed by the manubrium and gladiolus marked, and the antero-posterior diameter of the chest greatly lessened.

Among the *first symptoms* noticed *in older children* will be a *change in the voice;* it lacks resonance, and has a distinctive sound, which is described as a "dead voice." The head or upper register of the voice may be entirely destroyed, and should the child sing, the defect is more noticeable

Defects of hearing are very common. In Blake's cases they amounted to 83 per cent. My own statistics bearing on the relation of adenoids to deafness are incomplete, but of forty-two cases of which I have notes, twenty-seven, or about 64 per cent., showed deafness.

The involvement of the middle ear, the part generally affected, is brought about in several ways. Masses of adenoid tissue may be collected to such an extent in or around Rosenmüllers' fossa as to crowd upon and close the Eustachian tubes; this is open to question, as the growths are soft and yielding, while the tubes are firm and hard; or the openings of the tubes may be closed either by a vegetation or by thickened ropy mucus. Again, it may be swollen and congested by the repeated suction of mouth-breathing.

In all cases there is *interference with the proper æration of the middle ear* and a chronic inflammation of the Eustachian tubes to a greater or less extent, which extended directly from the throat. The membrana tympani is forced inward to the promontory to which it may be-

come adherent, thus interfering with transference of sound. Chronic otorrhœa is not uncommon.

Other symptoms are *occasional headache* and *cough, snoring* and *night-mare;* the senses of *taste* and *smell are affected, spasm of the glotis, nocturnal enuresis, contraction of the sterno-cleido muscles,* rarely night sweats, and nervous manifestations have been noted by many observers as due to adenoids.

Asthma is often a distressing symptom, and I can report four marked cases, one in an adult male, where removal of the hypertrophies caused cessation of the attacks. Nothing would be gained by a recital of cases, as generally the patients came under treatment for deafness or or a catarrhal condition.

Diagnosis is easy, and based on anterior or posterior rhinoscopy and digital examination of the post-nasal space in conjunction with other symptoms.

The prognosis is ordinarily favorable; the general health of the patient is slightly affected. With the child's increasing years the growths shrivel, disappear, and often leave no bad effects. Delavan considers adenoids in children often a cause of chronic nasal catarrh in adults, inasmuch as the mucous membrane does not return to a perfect condition.

Our principal attention should be directed to the ears; the Eustachian tubes must be restored to normal and any bands of adhesion of the membrana tympani freed.

The most satisfactory treatment is early removal, which has been done during the first months of life. The presence of adenoids is a constant menace of either acute inflammation of the space or some complication. In younger children a general anæsthetic is necessary. The patient may be seated in an assistant's lap; some prefer a prone position, with the head over the edge of a table. Cocaine will answer in older children; and the operation guided by the eye, as well as finger, under good illumination. A palate retractor of some kind is generally necessary. Dr. Sohon, of this society, has designed one that is quite satisfactory; or the palate may be tied forward by tapes passed through the nostrils. The growth should be removed through the mouth, as through the nasal passages the operation is hardly practicable. A finger-nail or a modified curette that fits the finger; also the cold wire snare has been employed.

Individual preference is either the galvano-cautery, the curette or a curved forceps; there is little hæmorrhage, and the soreness after operation passes rapidly. In the *New York Medical Journal,* September 25, 1897, there is a report of fatal hæmorrhage in a boy of 12 years. The internal carotid artery had been opened about its entrance into the carotid canal. The swollen glands are supposed to have pushed the vessel forward, and pressure from Gottstein's knife, which was used, caused a rupture of the artery. Such accidents have been reported, but their occurrence is extremely rare.

Differing with ideas of operative work, a damp day should be selected, as the size of the growth varies with atmospheric conditions. Avulsion is used, but where the growths are sessile, a sharp curette or cutting forceps yield better results. The entire growth must be removed; otherwise, there is recurrence. In using the galvano-cautery the growth should be touched every eight or ten days.

The after-treatment is very simple, consisting chiefly of cleansing and antiseptic sprays. Operators should watch for acute otitis media, as it has followed surgical procedures.

There are cases where objection is made to surgical measures. Then we resort to topical treatment, for improving the catarrhal conditions, and benefit may follow. This course is often dangerous and the treatment prolonged.

Mild antiseptic or cleansing sprays should be scrupulously used. We have abandoned the nasal douche as likely to cause trouble with the ears or deafness. Application at regular intervals of astringents, such as tannin or weak solutions of silver, or, as experience dictates, should be made. Iodine in glycerin is, with great numbers, a favorite application; powders, insufflated into the post-nasal space, are badly borne, but the internal administration of cod-liver oil and syrup iodide of iron are useful.

We should recognize adenoids as calling for removal, and any other measure as temporizing and unsatisfactory in the end.

1417 *N Street, N. W.*

Imperial Granum

Is generally used as an adjuvant to milk. Because it is readily prepared, nutritious and easily digested, its popularity has been regularly increasing until now he is behind the times who does not use it as a most reliable food for infants, children, nursing mothers, invalids and convalescents, and for delicate and aged persons.

SEPTATE UTERUS AND VAGINA.

A Report of Five Cases Met With in Practice and Consultation.

By EDWARD NICHOLAS LIELL, M. D., Jacksonville, Fla.,

Late Lecturer on Gynecology, New York Polyclinic, and Visiting Gynecologist, St. Elizabeth Hospital, New York.

A succession of cases of this kind occurring in one's experience, give interest to a brief report of them. No doubt the condition would be more frequently found if it was looked for.

Case I.—Miss R., age 23. History of menorrhalgia and menorrhagia, due to glandular degeneration of the endometrium. Uterus divided by septum (incomplete)—one portion, the left, being but one-third the size of the right, the left cervix being also very small. The septum in vagina was in close contact with the left wall of the vagina. Both canals of the uterus were thoroughly curetted and subsequently drained, with entire relief of symptoms.

Case II.—Mrs. E., age 28. Married three years. Pregnancy, about the third month. Case seen in consultation. Examination revealed septate vagina and uterus—two cervices and canals being detected, the right cervix being very small in size, the left quite large and softened. Furthermore, the condition was one of complete septate uterus and partly bicornate, the left portion of the uterus and left cornua being regularly enlarged, proportionate to the mouth of pregnancy, as compared with the right, the latter entering into the case but little. There was detected, also, a sulcus at the top of the fundus, to the right of which sulcus the fundus and cornua were considerably larger than the right. A diagnosis of pregnancy in the left half and horn of the uterus was made. The opinion was expressed that the patient would undoubtedly abort by the sixth month, if not before. Unfortunately, the patient was lost sight of subsequently. This case was considered by several physicians who examined it, as one of probable fibroid tumor of the uterus.

Case III was one of typical septate uterus and vagina, the patient undergoing operation for an ovarian cystoma. There were no special features otherwise connected with this case, an uneventful recovery being made as regards the abdominal section.

Case IV.—Mrs. K., age 32. This was a case of median septum of the uterus only—the septum forming from the fundus downward to within about an inch of the external os. This condition was one in which the cavity of the body of the uterus, as well as the upper third of the canal of the cervix, was divided into two parts by the septum, there being a common cervical canal for the lower two-thirds of the cervix. The presence of the septum was not made known to me until the introduction of the dilator preliminary to performing a curettage for metrorrhagia, the latter evidently the result of retained decidual shreds, she having had a miscarriage several weeks previously.

Case V.—This patient, aged 24, married one year, gave a history of having aborted some two weeks previously, and had been subsequently curetted for metrorrhagia by Dr. Dean, of Jacksonville, Florida. Because of the metrorrhagia persisting, in part, thereafter, and a suspicion of some probable abnormality associated with the uterus, I was called into the case. Examination proved the presence of a septate uterus and vagina, the former being incomplete, the left cervix being about two-thirds the size of the right, the latter being about normal. Anteversion was also present. Under the circumstances, curettage of both uterine canals was advised.

REMARKS.

The foregoing cases show that it is the exception for a septate vagina, longitudinal, not to accompany a septate uterus. The septum of the former, however, is usually much less dense.

Septate uteri are usually normal in shape though increased in size, and are divided internally into two cavities by a partition or septum, the latter being termed complete if extending from the external os to the fundus, or incomplete if extending but part way in either direction. Such a condition has relation to the coalescing of the ducts of Müller, the partition wall or septum remaining, however, unabsorbed.

The presence of this anomalous condition offers little, if any, interference with menstruation. Pregnancy is less apt to occur, however, in that the cervices are smaller—there being two—than in that of a normal cervix, and abortion or repeated miscarriages are the usual accompaniments of a septate uterus.

The fact of a double vagina being present, not infrequently tends towards painful coitus, especially so if the vaginal septum be rather firm and prominent. Where the septum of the vagina is thin and lacking in firmness, its division may be advised and accomplished generally throughout its whole length. Surgical interference may also be advised where the

septum of the uterus is incomplete and thin, thus avoiding in great measure the tendency to abortion which these anomalous conditions take upon themselves.

Where pregnancy occurs in an incomplete septate uterus, the decidua or placenta occasionally occupies both divisions of the uterine cavity, and thus may be the means of causing considerable hæmorrhage in the retention of attached portions of membrane, due to imperfect uterine contractions.

140 *West Monroe Street.*

Post-Mortem Delivery.

Dr. Bleich, of Tschirnau, reported (*Vierteljahresschrift für gerichtliche Medicin und öffentliches Sanitâswesen*, 3 Folge, Band xiv, p. 2) a rare case of *sarggeburt* (coffin birth.) On July 6, a dead woman was found in a shallow pool of water. She had escaped from home in a state of insanity. No signs of injury were found; but she was pregnant—probably in seventh month. Post-mortem rigidity was present. As evidence pointed to suicide, she was buried on July 9. Afterwards, it was ascertained that three young laborers had had sexual intercourse with the deceased shortly after one another. All three denied that criminal force had been used; on the contrary, the woman had been a consenting party. Exhumation and post-mortem were made on July 19. Delivery had taken place in the coffin after it had been closed; there were complete inversion and prolapse of the uterus and vagina. A dark red mass (the uterus) lay between the thighs—about the size of a head—from the under-side of which sprang a dark umbilical cord, and connected with the latter was the body of a child 36 cm. in length. Vulva was wide open. Uterus, flabby and like a sac, lay with its inner surface pressed against the thighs, together with the vagina; placenta had separated, and was dark brown, and hard. Muscular walls were thin and brittle.

Vaccinate!

Rumors of small-pox in various parts of the country are so numerous—especially along the Atlantic States—that we should see to it that our patients are all promptly and properly vaccinated. The New England Vaccine Company has a most excellent agency in Richmond, Va., in the firm of Wm. P. Poythress & Co., who are daily supplied with fresh vaccine points that are reliable.

CIGARETTES--EFFECTS COMPARED.*

By FREDERICK SOHON, M. D., Washington, D. C.

It may be well to exchange views on such a subject as the cigarette, as we are daily questioned as to their use.

Is tobacco, when smoked in the form of the paper cigarette, more harmful than using pipe or cigar? is the question, not if smoking is a pleasant and beneficial or disgusting and vicious habit.

We start with the admission that tobacco, used habitually, is not necessary to the maintenance of physical well-being, and may be detrimental. But even then we must view conditions as we find them, and if artificial environment, business and social drains create a demand—may be a necessity—for stimulants and sedatives, the craved steadying agent will be used, if the satisfaction enjoyed is anywhere near commensurate with the injury imposed on the body.

It is not my intention to enter into physiological effects of tobacco nor dwell on the sweet solace of the after-dinner cigar, or the keener relish and capacity for mental work afforded through the pipe. The first you already know, as medical men, and the others are known to you as consumers.

Let us consider, in a commonplace way, if there is a difference between the smoking of a cigar or a pipe and a cigarette, and some of the popular objections; some of importance, and others mere senseless objections against it.

I claim, with emphasis, that a boy or youth has no occasion to smoke at all, and should be restrained, directly and indirectly, from using tobacco while his body is developing and when business and social affairs do not bring him to look for the equilibrium that is maintained by its use.

It is claimed that cigarettes are not made of tobacco. If this were so, and tobacco itself bad, it would have to be proven that straw or dried leaves are worse.

But the present day conditions of trade, when everything, from yeast powder to armor plates must be helped along in the markets, analysis of cigarettes by experts would prevent manufacturers from adulterating their product, to increase its action, with hyoscyamus, jimstonweed, cannabis indica, or opium. They have not only to please the users, but to dread the comparative advertisements of rival firms.

There are some brands of cigarettes on the

* Read at a meeting of the Medical and Surgical Society of the District of Columbia, December 2, 1897.

market that are flavored with cinnamon or capsicum, but the same is true of many cigars. Official departmental reports show that the average cigarette is made of pure tobacco, and that it usually contains only 1½ per cent. of nicotine, while 8½ per cent. is in the ordinary cigar. Nor have I ever seen any proof that the mingled smoke of the paper is any more injurious than the smoke of tobacco. Cigarette papers do *not* contain arsenic, despite the oft-repeated and repeatedly disproved assertions to the contrary.

Socially the cigarette is a mild and pleasant diversion. Why is one called boyish or effeminate because he does not smoke the more "manly" cigar? Why should the general custom blame him because it is his pleasure to enjoy the milder smoke when he cannot or does not wish to poison himself with the stronger? Many object to its odor. This depends on the tobacco, and to many others the aroma of a mild Turkish cigarette is superior to the fragrance of a high-grade cigar, and in the worst specimen of "pimp sticks" is not as bad as the rank smell of a "rope end." If a cigarette-smoker's tainted breath is disagreeable to another in conversation, so is the heavy breath of the cigar-smoker, and the cigarette does not linger as long nor saturate the beard and clothes as the latter, nor have the suffocating penetration of the pipe.

Locally, the cigarette is less harmful to the smoker. The tough, dry, glazed, scabby pharynx of the smoker of a strong pipe, or the congested, follicular membranes, with engorged veins and hypertrophic papillæ of the cigar-smoker, is not found in the use of the cigarette.

Tobacco smoke is an irritant by virtue of its peculiar vapors, as well as the smoke itself. The hot fog of a pipe or the heavy cloud from a cigar work far more decided textural changes than the thin and cool haze of a cigarette.

The cigarette-smoker's throat is moist; he does not hawk nor scratch, and if any symptoms are shown they are in the other direction and he will usually have to expel an overproduction of thin, non-viscid mucus, which is apt to settle in the larynx. While the damage is so slight texturally as not to affect the gross appearance of the membrane, the area of action is more extended, owing to the almost universal practice of inhaling the smoke. The cigar, as well as the cigarette, affects the nose, the former being more injurious, but the cigar smoke is hardly ever drawn into the bronchi, because it is so much denser, hotter, and more irritating than the cigarette smoke that it cannot be done with impunity.

It is popularly supposed that the smoke is drawn into the "lungs," which, to the lay mind, is an unknown organ in structure and action. As the bodily movement of inspired air ceases before the bronchioles are reached, and the process completed by gaseous diffusion, the smoke inhaled cannot reach, in the short inhale, the really delicate structures, and what is deposited is (unless absorbed, which must be to a minute degree, when we consider that it takes a lifetime of city smoke and dust to pigment the pulmonary lymphatics,) carried outward, and not inward, by the ciliary action. Only in cases where the consumption is inordinately large does inhaling create a cough. Protracted over-indulgence can even create a purulent bronchial catarrh. Cigars or pipe do not do this, because they are not inhaled; but neither can the cigarette fiend so far insure himself as to entice an epithelioma. I am aware that this is rather a "Roland for an Oliver" argument, but it is given intentionally to give the abused cigarette a chance to divide its claims to popular disapproval. I believe that a census of smoking singers would show a large preponderance of cigarette users, and certainly one can sing with a clear tone after using a cigarette, but not after a cigar.

My statement as to the *comparative harmlessness* of the local action of cigarette smoke, when used in moderation, will possibly be contradicted, but they are my views as the result of very many throat and nose examinations.

Constitutionally, there is a wide difference in the action of the cigar and cigarette; but it is a question on how much of this depends the personal reaction to the nicotine vapor. The puff of the former is larger and stronger in alkaloidal strength than the whiff of the latter, but not as widely distributed over membranes where it can be more quickly absorbed; hence, the action of the cigarette is more immediate, but, being developed rapidly, not as much is taken in as by the gradually increasing absorption of the longer smoke, and its influence is sooner cast off.

The difference, then, seems to be in the choice of a profound intoxication, at longer intervals or a transient impression, that can be repeated oftener. It seems to me one is better able to judge his dose by the cigarette. He feels its action at once, when he wishes it, it is gone quickly, and let alone when not wanted; while from the cigar, he feels the full and deep action for hours. Many cannot smoke a cigar, being easily affected by tobacco, without becoming irritable, nervous, depressed, and shaky with anorexia and insomnia. I am one of these;

so to continue the idle habit, as you do with your cigars, I use the milder form of the cigarette.

If we allow the fact that one intends to smoke, in what is the cigarette more harmful than the cigar? I see no other objection than the greater liability to the formation of a habit of over-indulgence due to the greater satisfaction from inhaling and the more frequent use permitted on account of smaller separate doses. But are we not too apt to say that one has the cigarette habit simply because his indulgence is more noticeable on account of the frequency of smoking, and not on account of the amount of physiological perturbation? It is altogether a question of the personal equation. One may easily smoke a cigarette every hour, and still not inflict as much damage as another will do with his two or three cigars a day.

Were it not for the inhaling, cigarette smoking would be less harmful than the eating of pie; but it is needless to consider it from this point, for all cigarette smokers do inhale to a greater or less degree, and derive their main satisfaction for so doing. It is pleasant and insidiously enticing, and is such a weak irritant that it can be often repeated, and if yielded carelessly to, adds to the systemic desire for nicotine sedative, the acquired wish of the air passages for their own habitual irritation.

When the trachea and bronchi begin to demand their occasional dose of smoke, another factor enters. This is the reflex disturbance of other organs.

Up to this point, cigarette smoking is less harmful than cigar smoking, less harmful locally, and less systemically, as shown in that several cigarettes smoked in succession will not act as powerfully as one cigar in slowing the respiration or allowing the heart to become accelerated. Nicotine acts by removing the inhibitory influence of the vagus. Beyond this, when to the systemic desire for nicotine is added the *craving for the accustomed direct irritation of the nerve terminals*, the person may fairly be said to be addicted to the cigarette habit, one which, if continued, will reflexly cause trouble with other organs, affect his general health and mental vigor far more than the greater amount of nicotine in several cigars could do.

He who would dance, must pay for his fiddling proportionate to his pleasure. If he knows enough and is careful enough not to pay too dearly, the user of cigarettes derives as much satisfaction from his smoke with less harm than he who smokes cigars.

Proceedings of Societies, etc.

CLINICAL SOCIETY OF ST. JAMES DISPENSARY, SAVANNAH, GA.

Meeting, January 1, 1898.

Dr. Eugene R. Corson presented a patient upon whom *ligation of the external carotid* had recently been performed *as a palliative measure in the treatment of inoperable cancer of the tongue, floor of the mouth and inferior maxillary bone*—at the same time making some remarks on the encouragement of surface growth.

Quinin in Mal.ria Not Specific, Excluding the Simple Intermittents.

Dr. Van Marter read the paper.

Discussion.

Dr. Graham had found *quinin in the continued form of malarial fever* to be anything but a specific. Lauder Brunton brought out the fact that when bile is present in the stomach quinin by the mouth does no good, as it is rendered insoluble and is not absorbed. We have to deal with a toxemia, perhaps the toxin produced by metabolism of the parasite of malaria, or more likely the lowered resistance; and the altered condition of the blood and intestinal tract engendered by the parasite favors the bacillus coli communis in assuming a pathogenic form; and we really have, as Dr. Woodward long ago named it, *typho-malarial fever*. The bacillus coli communis, ordinarily an innocent saprophyte, may, under other conditions, perhaps, become pathogenic and be a very near relative to the typhoid bacillus. Dr. Corson does not mean that we have typhoid and malarial fever at the same time in the same subject; but after the plasmodia are no longer found in the blood by the microscope, the fever continues unaffected by quinin; therefore, the fever is due either to malarial toxin or, more likely, to a toxin elaborated by the bacillus coli communis, over which quinin has no beneficial effect.

One of the causes of fever in malarial poisoning, is probably that a more rapid oxidation of blood elements is produced by growth of the plasmodia, for these organisms produce quick destruction of blood placques, and how, if not by oxidation? The more rapid oxidation is anywhere, other things being equal, the higher the temperature must be.

Quinin has been very disappointing in this disease; it is of little or no value unless supplemented by other drugs. Warburg's tincture

has served well. Some cases die with quinin given, even in heroic doses, at the proper time.

Dr. Sidney J. Lanier fully agrees that we do not have in quinin the best treatment for some forms of malarial fever, nor even in some of the irregular forms of intermittent. Many times has he made patients more uncomfortable, intensifying their headaches while making them more nervous and more nauseated by giving quinin in real malarial remittent fever.

Nearly every physician in our Southern country, familiar with what was so long termed *bilious remittent fever*, will agree as to the necessity for giving other drugs than quinin in *continued malarial fever*. If we administer quinin freely for four or five days without getting marked morning remission, with moist tongue and skin, we had better leave off quinin and use some other remedy. If we use quinin, we should find some form suited to the conditions of the stomach; plain sulphate of quinin in the stomach of a patient who is nauseated and perhaps vomiting mucus and bile is only an increasing irritant. In nearly all malarial conditions we get better effect from bisulphate than from either the sulphate or hydrochlorate. He mentions these preparations because it is upon one of them that we rely in nearly all cases where quinin is used except hypodermically.

Quinin in suitable doses at the proper time seems to be a *specific for malarial affection in those cases which have the nearest approach to marked intermittency;* therefore, the more continuous the symptoms, the less does it act as a specific.

Quinin certainly does not cure every case of malarial fever, even though you have the patient *thoroughly cinchonized.* He has seen patients fully deafened by it and the fever go along unabated; and it is here that we do our patient an injury with the drug. *Malarial fevers of nearly all types can be cured without quinin!* It is not very uncommon to find persons with malarial fever who cannot take it because of idiosyncracy. He recalled a man with typical malarial fever, who contracted his sickness while digging up the earth while laying gas pipes; his fever was markedly remittent. He thought of quinin at once, but before he finished a prescription the patient assured him that he could not take it in any form; but he ordered an acid solution of bisulphate quinia, thinking that he would get a quick effect; and that if unpleasant symptoms should follow, he would relieve them with bromid-antipyrin or morphin. In an astonishingly short time after the patient took the first dose, he was called back to find him suffering from a terrifying rash, was nauseated, nervous, greatly depressed and bad off. After the quinin symptoms disappeared, fever rose to a high point. Thinking that it was the quinin in the stomach, irritating the mucous membrane, that had produced the bad symptoms, the following morning he injected the drug hypodermically and administered it per rectum; he was forced to regret the experiment, because the patient was no better, and because he had produced a new set of symptoms by quinin. He immediately ordered three drops of apiol every two hours, alternating with a formula so much used by Dr. Corson, of this city, which contains Fowler's solution, tincture nux vomica and tincture gelsemium. In about forty-eight hours the patient was relieved of all neuralgic pains and the fever began to fall. From that time it was plain sailing, for the patient got readily well.

A number of patients unable to take quinin he had pulled through with other drugs. Various writers upon malarial fevers note cures, even of intermittents, by other drugs where quinin had failed.

Continued malarial fevers in the South are evidently on the increase as against the decrease of the purely intermittent fevers, and we must study more closely the cases which need quinin and those which are best treated without the drug.

Dr. Daniel wes inclined to think Dr. Van Marter rather exacting in his ideas as to what constitutes *a specific* As for quinin being a specific for all the sequelæ and complications of malaria, no one ever set forth such claims, any more than that antitoxin and mercury will correct all sequelæ of diphtheria and syphilis; and yet they are recognized as specifics if administered at the proper time and in right amounts, depending upon the patient and stage of case. There is no such thing as a specific in the narrow sense of the word; but as ordinarily used quinin is the *only specific for malaria.* Generally failure to cure is not due to the want of anti-malarial properties in quinin, but to timidity of the physician, who fears a harmless drug, and attempts to cure a disease that has permeated the most remote parts of the body with the pitiful amount of 3-to 15 grs. in twenty-four hours; here they stop and say the patient is cinchonised, because he has "tinnitus aurium," and quinin given above this amount will pass through the body unchanged and have no effect. Would the advocates of this theory stop instilling atropia into the eye for an iritis with the pupil to a

half or three-fourths dilatation and some dryness of the throat? There are your physiological effects, but you dare not stop the atropia until your iritis subsides. The dose of a drug is not the amount it takes to have a physiological effect, but the quantity it takes to have the desired results. So in administering quinin, don't stop with 5 grs. a day because the ears ring, but give the amount that it takes to break the fever and prevent a return of the malarial paroxysm; 30, 90 or 120 grs., if needed, and you will surely cure your patient, unless moribund.

Another important factor in administering quinin is the form in which it is given. He prefers the sulphate either in solution with dil. sulphuric acid or made up in fresh pills with dil. sulphuric acid and glycerin. He also prefers giving it by the stomach, when possible. His limited experience has convinced him that subcutaneous injections of quinin for the cure of malaria are about on a par with the subcutaneous injections of bichloride mercury for the cure of syphilis. We can get the physiological effects of the mercury as well as of quinin, but injections of mercury will not cure syphilis in as short a time as is claimed, nor has he found quinin given under the skin to act near as efficiently as when given in the stomach.

Dr. Van Marter states that very often in the "hæmoglobinuric" form of malaria, quinin will cause a return of the so-called bloody urine. He must differ with the doctor, and asked if *he* ever saw a case in which it occurred. Dr. Daniel had seen a few cases of hæmoglobinuria due to malaria; and in the intermittent type he has never seen a recurrence of the hæmoglobin after giving quinin in doses of 30–60 grs. six hours prior to the anticipated paroxysms. If it is a remittent type of malarial hæmoglobinuria, don't wait for the fever to go off (for it might be the patient instead of the fever), for it is not going off unless you make it go *with large doses of quinin.* Begin immediately that you see the patient; give from 60 to 120 grs. within an hour. If his stomach will not tolerate it, put it under his skin as next best. He thinks Dr. Van Marter's idea of well diluting the solution a good one. But never be afraid of quinin causing a recurrence or increase of the hæmoglobin; *it is want of quinin that does it.* As for malarial hæmaturia, he had never seen it unless as a local trouble in conjunction with a cystitis.

As for Warburg's tincture he has used it repeatedly without good permanent effects—better effects being obtained from quinin and calomel.

Dr. Lattimore's experience agrees wtth that of Dr. Corson, that there are comparatively few cases in Savannah of simple intermittent fever. He had under observation three cases of malaria, with different manifestations. Blood examinations have been frequently made; although the symptoms have nearly subsided under treatment—quinin sulph. (by mouth)—the blood has practically remained unchanged. At times, the plasmodia are fewer in number, at other times more numerous. These cases of chronic malaria have existed over two years and have been under treatment several months. They show in a limited way the effect of quinin on the symptoms and blood in some cases of chronic malaria.

What has been of especial interest to him this evening are the large doses of quinin that some men are able to give, with seemingly, only, good results.

Dr. Oliveros thinks we are sadly in need of a definition of "bad effects." He has heard tonight for the first time in his life that quinin is given in doses of 60 to 100 grains, repeated in one or two hours, without getting any bad effects in the head, or otherwise. Such a procedure he thinks absurd. If no bad effects are had, it is simply that there is no absorption of that amount, or anything like it. If 5 or 10 grains of quinin repeated every two hours, for a time, will not produce the desired effect on the fever, the drug should be discontinued and some other plan of treatment adopted.

There are many points in the paper with which he agrees fully. *In the continued form of malarial fever,* quinin has little or no effect. In fact, he now never uses the drug in these cases—with one exception, and that is when there is a very sharp remission, especially at the tail end of the case. He then gives two ten grain doses, in the hope that he may get result enough to finish the case; in other words, he gives the patient the benefit of the doubt; but the physician gets more disappointment than the patient does benefit.

Not only in the continued form of malarial fevers is quinin no specific; in many cases of intermittent form the specific action seems very slight. Country physicians run across cases where it has been given faithfully, in correct doses and at proper times without benefit, until the patients move from the neighborhood in which they contract the disease. Likewise in malarial cachexias quinin is no specific; in fact, it does little good without auxiliary treatment.

Dr. Fitch said that quinin is not the specific which northern clinicians claim it to be. They

do not see malaria in its natural home. He has repeatedly treated cases of malarial poisoning in which, prescribed in any form, dosage, manner or time of administration, it had no effect in controlling the fever. It is not an antidote to the plasmodium of grave continued malarias or the toxins produced by them. Yet in the mild tertian and quartan types of malaria it is a specific if given in proper dose and at the proper time. He had a case of malaria (proven by microscopic) algid form, pernicious type, in which quinin had been given in small doses for weeks, yet did not prevent the development of malaria. He prescribed large doses, 20 grs. of the bisulphate, hypodermically, every four to six hours; produced cinchonism, yet fever continued, with regular paroxysms daily. He then gave the same preparation dissolved in normal saline solution subcutaneously, and later by intravenous injection, none of which influenced the disease. He saw this patient die, and witnessed the failure of quinin as a specific.

He has limited experience with quinin in malarial hæmoglobinuria. With many others, he has to come to the conclusion that hæmoglobinuria, if not actually caused by quinin, is a condition in which it is an absolute poison. It is claimed by many writers (Plehn, Richardson and others) who have had favorable opportunities to study its action in these cases, that it may produce the grave symptoms, and that it is of no value as a remedy.

Dr. Cerna, in giving his experience with quinin in malaria on the Gulf Coast, says, In cases where he found the plasmodium of Laveran, when quinin proved of no value, he has prescribed, with happy results, phenocol hydrochlorate 5 to 10 grains, three times a day for four or five days, cutting the disease short after quinin had failed completely.

Dr. Corson differed greatly with the views expressed by Dr. Van Marter. He should have defined what he meant by a specific. Taking malaria in its entirety, quinin is a specific and is so recognized all over the world. *By a specific*, we mean that which prevents or cures a disease. In an absolute sense, no such remedy exists; there is no specific which will prevent or cure *every* case of disease over which it has this reported special influence. Even drugs most worthy of the name fall short of being absolute specific. If you add a barium salt to dilute solution of sulphuric acid, you always get a white precipitate of barium sulphate; but the human body, viewed as a solution, is too subtle and too heterogeneous to give a reaction with any reagent which can be predicted with certainty.

The continued type of malarial fever means a greater involvement of the system from malarial poison than simple intermittent type. With this greater poisoning, the less rapid and less effective is the action of the quinin. We see cases where this poisoning has gone so far that no drug can avail, and the patient will die. Other drugs than quinin will cure intermittent fevers. In certain forms of malarial toxæmia and anæmia it alone is quite powerless to effect a cure, and iron, arsenic and strychnia with mineral or organic acids must be brought in. In certain individuals quinin greatly aggravates the case, due to idiosyncrasy, and he has even seen cases where it might act as a fatal poison in large doses; and yet, most emphatically, after treating malarial affections in Savannah for eighteen years, he has cured by quinin a large majority of cases of continued remittent fever, of larval forms of malarial fever, due to mild yet chronic malarial toxæmia, and a fair proportion of chronic forms when toxic symptoms are more marked. The fact that mortality is high in pernicious malarias, be they hæmorrhagic, icteric or algid in type, does not militate against the specific action of quinin. When malarial toxæmia has gone this far there is such a paralysis of nerve centers that the system responds not at all, or but slightly, to any drug.

In certain continued types of fever in Savannah, which plainly point to enteric intoxication, be it true typhoid, or due to bacillus coli communis, or other toxic agents from the alimentary canal, quinin is useless; in fact, no drug cuts the disease short. Before the nature of the fever is determined he gives quinin to prove or disprove the malarial character of the case. This therapeutic test is valuable. Quinin is most worthy the name of specific in malaria, be it intermittent or remittent in type; it is the first drug to be considered, and only when conditions arise which are *secondary* to the acute primary poisoning, we must call in the aid of other drugs.

Dr. Simmons believes in quinin, and yet he has seen cases of malaria in which it aggravated the symptoms. He speaks particularly of hemorrhagic types, of which he has observed two forms, the sthenic and the asthenic. At Toomsboro, Ga., near which he has lived, it is the experience of physicians that *in the asthenic type*, a form of chronic malarial poisoning, with temperature normal or slightly above, quinin does not cure in either large or small doses; the chief reliance is morphin hypodermically. *In the sthenic type*, preceded by calomel, quinin in heroic doses does act as a specific. But in

fever, where there is no marked remission or intermission, it will often fail. Large doses, from 30 to 60 grs., are often necessary to cure obstinate cases.

Dr. Van Marter, in closing, stated that he had not deemed it necessary to define the word specific; he defined *the types in which quinin usually fails to act.*

Dr. Corson avoided discussing just those types.

To Drs. Daniels and Corson he said that he does not claim that quinin is *the primary cause* of hematuria, but it is the cause of its *re appearance* quite frequently. His observations have been based upon a few cases only, but he studied particularly the work of Plehn, who saw over 500 cases. Notice how very closely, indeed, the low, algid types, described by Dr. Simmons, coincide with his own observations, and again how the experience of local practitioners fits that of confréres in India and Africa in regard to the use of opium.

Drs. Corson and Daniel failed to catch the drift of his ideas. Quinin *is specific* where you see the patient early enough, but it fails utterly *where we have the toxin* to deal with; they did not differentiate between the two.

As to the enormous doses advised by Dr. Daniels, he believes them to be useless. The quinin is not absorbed, and probably fails owing to the presence in the stomach and bowel of an excess of altered bile, which Dr. Graham so aptly reminded us of. The dose of quinin is that which within two hours makes the ears ring; that is the physiological rule, be it 2 grs. or 200 grs.

Dr. Graham is right when he insists that we have a *typho malaria*, termed by Italian clinicians, particularly Baccelli, "*typhoid like subcontinuous malaria.*" The idea that the bacillus coli communis takes on a virulent form acting as a separate infection, is worthy of study, appealing as it does to common sense.

He was interested to hear that Dr. Graham found plasmodia in a fetus' blood; this is the first time such an observation has been made —Dr. Graham is a thoroughly competent hematologist, and would not make an error in such an examination.

Drs. Lanier's and Oliveros' experiences coincide with his own, as do in a measure those of Dr. Simmons. He most heartily agrees that, taken as a body, *country physicians* are most accurate observers, and that where their experience is at variance with theories they are most apt to be correct.

Dr. Paige instances patients *in Boston* who took 2 grs. of quinin three times a day for six months without harm. They lived in a totally different climate, and were subject to a totally different form of infection and toxin.

Dr. Lattimore's cases do not correspond to the types of malaria described in the paper as particularly resistant to quinin; they were not cases of *toxæmia.*

MEDICAL AND SURGICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Meeting of December 2nd, 1897.

Dr. Shaw read a paper on

Thyroid Therapy in Connection with Some Diseases of Nutrition. [See page 605.]

DISCUSSION.

Dr. Johnson Eliot said that he was not prepared to speak of the functions and uses of the thyroid gland, as many are not absolutely proven, and are still matters of theory. But he had used thyroid extract on several cases. One was a case of *exophthalmic goitre*, where the thyroid had suddenly swollen to such an extent as to interfere with easy breathing, and was painful; the eyes were protruded, and great irregularity of cardiac action was present. Fine grains of the powdered extract were given three times daily, but this dose was reduced to three grains, as the heart action became very weak; there was staggering and great weakness of the knees. In about two weeks the gland subsided to normal and the patient passed from view.

Another case was one of *acute thyroiditis*—had many symptoms similar to the above, but without ophthalmic trouble. A few years before, she had experienced sudden swelling of the thyroid gland, which was attributed to the drinking water. The attack in which he saw her could be attributed to no cause other than anæmia, which was marked. The gland had swollen particularly to one side—he thought the left—painful, pressing upon the larynx and causing cough. She was given carbonate of iron and three grains of thyroid extract; local massage was used; in a short time, the swelling disappeared. Iron and arsenic were continued a few months, and as yet no recurrence has taken place.

Thinking it might have favorable action, he used it in a case where there was a *chain of swollen cervical glands.* The glands did not diminish in size, but there was notable loss of body weight.

Dr. Bishop had no experience with thyroid medication. The rapid reduction of body weight following its use was very interesting. It acts by impeding assimilation. He has seen published different proprietary remedies for obesity, but has never obtained the successful results claimed for them. He believed the best method of reduction of obesity was by diet and exercise. His experience with electricity in goitre cases has not been what he had expected.

Dr. Jas. D. Morgan said that on a visit to the clinical ward of St. Thomas' Hospital, London, in 1885, his attention was attracted to a middle aged woman, around whom a number of students had gathered to listen to the remarks of Dr. Wm. M. Ord. Dr. Ord, who was the first to suggest the *term myxœdema*, was expatiating upon the function and characteristic appearance of this woman, which made him positive she was suffering with myxœdema. He well remembers the case: a large, heavy, dull, seemingly bloated appearance of the face and whole body; almost listless, with a peculiar dryness, and he might say mummified condition of the skin. There she sat, paying little attention to the circle of interested spectators. It was Sir Wm. Gull who, a few years before this, had first described the similarity of this disease to cretinism.

The thyroid treatment of this disease was not suggested until some ten or twelve years afterwards, and was then first attempted in grafting the thyroids of sheep into the bodies of patients with myxœdema,

Three cases of myxœdema, which he had attended, all improved under thyroid treatment.

For obesity, the thyroid is of little permanent use; the patients rapidly gaining in flesh again, when treatment is stopped.

Dr. Kober said that since the fats and carbohydrates form fatty tissues, or are transformed into fat, the most physiological way of treating obesity would be to limit the introduction of these foods into the system.

Dr. Shaw, in closing, said he could add nothing. Dr. Wood, of Philadelphia, claims extirpation of the gland causes enlargement of the spleen.

In the absence of Dr. Sohon, the Secretary read his paper on

Cigarettes—Effects Compared. [See page 612.]

DISCUSSION.

Dr. Vincent said he believed the abuse of cigarettes is akin to the abuse of alcohol; some can stand more than others. In the majority of cases, it is due to over-indulgence, which is remedied by the withdrawal of the cigarette and the administration of strychnine. He believes other forms of tobacco are more relaxing to the system than the cigarette. He has known the analysis of the *cigarette paper* to show arsenic.

Dr. Wm. B. French, speaking from a personal experience of over twenty years indulgence in the habit, thought that there could be no difference of opinion on the subject of young people, boys of sixteen or under, smoking cigarettes or using tobacco in any form. The effects could not be otherwise than injurious. But as to the practice injuring all smokers, that could not be conceded. Some throats were harmed more or less, no doubt, and some nerves were made unsteady; but the same could be said, as far as the nervous system was concerned, of the effects of strong coffee and a number of other pleasures of life if abused. Personally, he could discover no harmful results unless possibly an unsteadiness of the hand at times, but that occurred perhaps as frequently in other men who did not smoke. It seemed to him that epithelioma of the lips could hardly be charged to cigarette smoking.

Dr. Kober said he did not think Dr. Sohon's plea for the cigarette had been sustained. In a recent collective investigation, based upon 1,071 Russian students, 54.66 per cent. of the medical students were found to be habitual smokers, and 47.18 per cent. of the technological students; the former consumed on an average 19, the latter 22 small Russian cigarettes. Of the smokers, 16.09 per cent. were found to have some affection of the respiratory tract, while only 10.69 per cent. of the non-smokers were thus affected. In respect to diseases of the alimentary tract, the figures were respectively 11.88 and 9.92 per cent. The toxic effects of tobacco are due to nicotine and certain pyridin bases, developed during smoking. The common grades of tobacco contain from 3 to 4 per cent. of nicotine, while Syrian and Havana tobacco contain little or none; hence the amount of injury depends largely upon the quality of the tobacco. Nicotine and pyridin cannot fail to irritate the mucous membrane of the respiratory and digestive tracts, and though a certain degree of tolerance may be established, the figures referred to are suggestive of danger. It seemed to him that the smoke from cigarettes is much more readily inhaled, and thus intensifies the toxic effects. At all events, chronic pharyngeal, bronchial and gastric catarrhs are common; the latter enfeeble digestion and result in emaciation and debility, and

lay the foundation for more serious affections of the nervous system. Chapman and Kirkbride have reported cases of mental disorder due to the abuse of tobacco. Da Costa has described the tobacco heart. Smokers not infrequently suffer from amblyopia and amaurosis, and in his judgment the premature use and abuse of tobacco is one of the most common causes of neurasthenia.

Dr. J. H. Bryan said he has seen some serious trouble follow cigarette smoking. Men lose their mental snap; they have less mental vigor than the pipe or the cigar smoker. He has noted five or six cigarette smokers, and they have fallen far below the mental standard. Has seen injurious local influence upon the throat. Is a smoker, but worse ill-effects follow cigarette smoking.

Dr. French wished to know if Dr. Kober thought cigarette smoking shortened life. He believed the toxic effects can be produced by the use of any form of tobacco, and that the cigarette habit can be easily abused.

Dr. Johnson Eliot said he agreed with the speakers as to the injurious effects of cigarettes. Dr. Sohon insists on their mildness and freedom from nicotine and empyreumatic oils as compared with cigar and pipe smoking. Is it not in this freedom that many dangers lurk? The cigarette smoker almost invariably inhales the smoke, which is not the case with the cigar. A single deep inhalation of cigar or pipe smoke brings on immediately a violent paroxysm of coughing, showing its irritating nature. The smoke of cigarettes contain a small quantity, yet some oil and nicotine, but it is drawn over a larger surface, from which absorption may take place.

Dr. McKimmie said that although he had been smoking cigars or pipes for more than fifteen years, he suffered from no trouble with the throat or nose, but if he smoked the cigarette trouble was caused. He does not believe granular follicles of the throat are due to smoke, but are due to fine particles of tobacco or excessive heat. He does not believe a smoker's throat in a worse condition than a non-smoker's, both laboring under the same surroundings.

Dr Kober said, in reply to Dr. French, he had no statistics at hand, but it seemed as if figures presented show short life due to the abuse of the cigarette.

Dr. Johnson Eliot read a paper on

Post-Nasal Adenoids. [See page 608.]

Discussion.

Dr. Jas. D. Morgan said the paper was very complete and he could add nothing. The essayist had neglected to mention in his treatment that the removal of adenoids in the vault of the pharynx will often benefit affections of the eyes.

Dr. J. H. Bryan said he believed the paper was a valuable one to the general practitioner, as it directs attention to this class of cases, so that childrens' parents may be persnaded to allow the removal of these growths. These growths are not limited by geographical bounds. since L. W. Meyer, in a recent paper, has shown the almost universal prevalence of the disease. It is of importance to impress upon the physician the necessity of the removal of these growths. He does not advocate the galvano-cautery in the post-nasal space, as it is liable to bring on otitis media, and it is painful.

Dr. McKimmie spoke of the various operations for the removal of these growths, and the instruments used. He thought in operations with the forceps those forceps which opened laterally were preferable to those opening antero-posteriorly, because there was more danger of wounding the mouth of the Eustachian tube in using the latter.

Dr. Eliot, in closing, said the antero-posterior cutting forceps he had not used, nor could he understand how they would be applied, unless entirely to a low hanging variety of adenoid. The occurrence of otitis media after operation had been mentioned in the paper. He used the galvano-cautery, only where objection was made to more radical means; the applications are painful and the treatment prolonged. In regard to hæmorrhage from anomalous arteries, every operator bears the occurrence of such a possibility in mind, but too often he appreciates the danger when but little hope can be entertained. Fortunately, these misplaced vessels are so rare that the operation may be undertaken without fear.

Charges for Interviews.

The *American Medical Journal* says that some leading Western doctors have signs in their offices which state: "Time devoted to solicitors and agents will be charged for at the same rate as office consultations."

Columbus, Ohio,

Has enough. It is said that the population is about 100,000, and that there are 1,300 physicians trying to get practice there. Some succeed; many don't—although there are two large free dispensaries in the city.

Analyses, Selections, etc.

Improvement of General Anæsthesia by Adapting the Boiling Point of the Narcotic to the Temperature of the Body (Schleich).

During the meeting of the Medical Society of the county of New York, December 27, 1897, Dr. Willy Meyer said that one out of every two thousand dies under chloroform anæsthesia, and one out of ten thousand under ether anæsthesia. Dr. C. L. Schleich, of Berlin, reasoning from experiments on animals, was of opinion that the absorption of a general anæsthetic is dependent on (1) the surrounding temperature, and (2) the boiling point or maximum of evaporation of the anæsthetic.

If a person inhales an anæsthetic having its point of maximum evaporation at 59° F., less will be introduced into the blood than if the anæsthetic has a maximum evaporation of 149° F.—*e. g.*, chloroform. If the maximum evaporation of the narcotic approaches the temperature of the body, the lungs alone are capable of regulating the elimination, so that exactly as much is exhaled during expiration as was inhaled during inspiration. This is why deep narcosis cannot be produced if the maximum of evaporation of the narcotic and the temperature of the body correspond. If, however, the maximum evaporation is 149° F., more of the anæsthetic is absorbed in inspiration than is eliminated in expiration. It must, therefore, be eliminated somewhere else—the heart, kidneys, and liver must be called into action; and for this reason the after-effects on these organs are much more pronounced after chloroform than after ether. Sulphuric ether having a maximum evaporation of 93° F., at a temperature of 100.4° F. must expand and distend the pulmonary alveoli. This obstruction to respiration causes a certain degree of cyanosis. Another result is the secretion of mucus and the frequent occurrence of secondary pneumonic infiltration. The pressure of carbonic acid accumulating in the blood partially overcomes the tension of the ether vapor in the alveoli and permits its escape; then the cyanosis disappears and true ether narcosis begins. The slight excess thus remaining in the blood suffices to affect the brain and produce unconsciousness. Death from ether on the operating table, therefore, is almost impossible as long as respiration is efficient. On the other hand, it is evident why ether narcosis sometimes has such deleterious effects on the lungs. Owing to its high boiling point more chloroform is absorbed by the blood than is needed, and in leaving the organism overtaxes all the parenchymatous organs. Ether, however, is converted into vapor so rapidly when inhaled into the lungs at the temperature of 100° F., that it would not enter there at all if the alveoli did not first become overfilled with carbonic acid gas. It is evident a safe narcotic would be one in which the amount eliminated during expiration would almost equal that absorbed during the previous inspiration.

In Vienna a mixture of one part chloroform and six parts of ether (known as "*Vienna mixture*") had been used extensively. Schleich was the first to show that the greater safety of this and other so-called "mixtures" depended upon the lowering the maximum evaporation more than twenty seven degrees. Thus the point of maximum evaporation of the A. C. E. mixture is about 119° F.—certainly a good deal nearer the temperature of the body than the point of maximum evaporation of chloroform.

The chief features of Schleich's work are as follows: (1) Ether and chloroform were mixed with a benzin; (2) by mixing various ethereal substances the resulting fluid was a true solution in a chemical sense, and not a mere mixture of different ethereal substances; (3) by changing the proportion of the components one could change the maximum evaporation at will, and so, in a given case, adapt the maximum evaporation of the anæsthetic to the temperature of the patient at the same time; (4) these effects hold good, and were verified in cold-blooded as well as in warm-blooded animals; (5) the result is the same, whether the anæsthetic was inhaled, given by rectum, or injected subcutaneously; and (6) the result was exactly the same in the human subject as in the lower animals.

Schleich's Solutions.—Schleich recommended three different solutions, made up by volume, and not by weight.

No. 1 is composed of chloroform, 1½ oz.; petroleum ether, ½ oz.; sulphuric ether, 6 oz.

No. 2 is composed of chloroform, 1½ oz.; petroleum ether, ½ oz.; and sulphuric ether, 5 oz.

No 3 is composed of chloroform, 1 oz.; petroleum ether, ½ oz.; and sulphuric ether, 2⅔ oz.

Dr. Meyer said *his conclusions* were based on one hundred cases of general anæsthesia observed by him since the middle of last September, as follows: Excitement is very rare during

induction of anæsthesia, and not marked at any time. There is rarely accumulatfon of mucus, never cyanosis. During anæsthesia, although the solution contains 60 to 80 per cent. of sulphuric ether, there is no accumulation of mucus, and cyanosis is rare. The pulse is full and regular, sometimes fuller than before. The respirations are not impaired so long as the narcotizer attends to his work. The type of respiration is the direct index of the patient's condition. When respirations become deep and frequent, it indicates the approach of the danger limit. After the anæsthetic is withdrawn, patients awaken more rapidly than after chloroform or ether. More than one-half of Schleich's patients walked home one hour after being anæsthetized. Vomiting occurs less often than after other narcotics; in 44 per cent. of his cases. In no case was there consecutive bronchitis or pneumonia, although gastrostomy was done on two very wretched persons with very fetid bronchitis. These patients stood the operation well, and the bronchitis was not increased. Albuminuria was found in only 4 per cent.—a distinct improvement on former experience. A few patients disliked the odor of the solutions. When administered by artificial light, the formation of chlorine gas was very noticeable, and made the attendants cough. This anæsthetic is best administered on an Esmarch mask, covered with oil silk, to which a small funnel has been attached. Dr. Meyer thought that there could be no doubt that these solutions would soon take the place of chloroform and ether.

Dr. Ralph Waldo said that Prof. Schleich had recently used his anæsthetic solutions in an ordinary towel ether cone. His own personal experience with this method comprised four cases; in all the ordinary cone was employed. A very small quantity of the mixture was used, and the patient was allowed to breathe very little air. The first patient was under complete anæsthesia for fifty-three minutes; one and one-fourth ounces of the anæsthetic was used. The pulse was 80 at the beginning, and 78, strong, and good at the completion of the operation. The second patient was under the anæsthetic for fifty-three minutes; one and one-half ounces was used; the pulse was 96 before and 84 after the operation. The third patient was anæsthetized for thirty-five minutes; one ounce of the anæsthetic was used; the pulse was 86 before and 80 afterward. The fourth patient was under complete anæsthesia for twenty minutes; the pulse was 90 at the beginning and 86 after the operation. Thirty minutes after the operation the patient's sensation seemed as good as before, and in less than an hour he went home alone. The rapidity with which the patient came out of the anæsthesia was particularly noticeable when the No. 1 mixture was used. He proposed to continue its use in both public and private practice.

Cyanosis and Excitement in Cases of Nasal Stenosis.—Dr. Franz Torek had employed this method of anæsthesia during the past month, and could confirm everything that had been stated in the paper. The patients recover so rapidly that he had used it sometimes in dispensary practice. For such work solution No. 1 was most suitable. He had met with cyanosis and excitement in a few cases. It had not seemed to be due to the anæsthetic, however, but rather to disturbance of the respiration, as from nasal stenosis. He had observed this in cases of resection of the lower jaw for carcinoma. When using the anæsthetic by artificial light, he had noted a very decided evolution of chlorine gas, though hardly more than with chloroform alone. The anæsthetizer should be just as watchful as with other anæsthetics.

Less Mucus and Less Nausea.—Dr. Parker Syms said that in experience with the new method the longest period of anæsthesia had been two hours and five minutes, in a difficult case of urethral stricture. Anæsthesia had been induced in aboot five minutes, and the patient had returned to full consciousness within ten minutes after the anæsthetic was withdrawn. Only four and one-half ounces of the No. 1 solution had been used. The shortest period of anæsthesia had been twenty-three minutes, and only three-fourths of an ounce of the anæsthetic solution was consumed. In his cases there had been very little cyanosis—certainly less than with ether. There had been little or no excitement, and an exceptional freedom from hypersecretion of mucus afterward. A few patients had vomited, but they had been free from the usual annoying nausea. He would certainly continue its use for general anæsthesia.

Dr. W. McEnroe, comparing our limited knowledge of the new anæsthetic with our large experience with and the demonstrated safety of chloroform and ether, remarked that he knew a man who had given chloroform to six thousand soldiers upon the field of battle, without a single fatal result.

Dr. M. L. Maduro said his experience in thirty cases had taught him that good results could be obtained with a small quantity—not more than two and one-half ounces in an operation lasting one hour.

Dr. Florian Krug had employed the method

in sixty-nine cases, most of them major operations. Solution No. 3 was employed, and the average duration of the anæsthesia was fifty minutes. The average time for the induction of anæsthesia was ten minutes. The average quantity of the solution used was seventy cubic centimetres, and the average quantity necessary for the entire period of anæsthesia one hundred and sixty five cubic centimetres, or five and one-half ounces. In all but one of the cases the respiration and pulse were excellent. In four cases cyanosis was recorded. In no instance did it seem advisable to resort to any other anæsthetic.

Dr. Meyer, in closing the discussion, said that there was great difference of opinion among wholesale chemists regarding petroleum ether as to its properties and its boiling point. Probably other anæsthetic mixtures would be discovered possessing the requisite maximum of evaporation, but the advantage of Schleich's solution was that only one new agent, petrolic ether, was introduced, the other components being familiar anæsthetics. The quantity used depended very largely upon the kind of mask and the solution. The effect of solution No. 1 was much more transient than that of Nos. 2 and 3; hence, for operations about the face one should always nse No. 3. For such operations it would be difficult to keep the patient anæsthetized with No. 1.

Mode of Administration.—He believed a mask which did not allow free evaporation was the best. As little as possible of the anæsthetic should be given; with the ordinary towel cone the quantity administered could not be estimated. Esmarch's mask covered with flannel and then with oil silk constituted the best arrangement, and it was convenient to have it provided with a funnel into which the anæsthetic agent could be dropped. The usual rule in administering chloroform was to give one drop about every five seconds; in the new method a drop should be allowed to fall on the mask about every second—in other words, it should be continuously dropped upon the mask. On an average he had used six to eight ounces of the anæsthetic for an operation lasting from forty-five minutes to two hours. The occasional cyanosis that had been observed did not seem to be fairly attributable to the anæsthetic itself. The respiration must be carefully watched, and if the breathing becomes rapid and deep, the administration of the anæsthetic must be suspended and more air given. The whole narcosis was very similar to that of chloroform. The principal difference noticed so far was that, in from six hundred to one thousand administrations, in not a single instance had the patient been in a dangerous condition at any moment. In only 4 per cent. of the cases had there been even slight albuminuria. Not a single death had been reported from the use of this anæsthetic.

Cases of Puerperal Septicæmia Treated by Antistreptococcic Serum.

Richard Richmond (*Lancet*, September 25, 1897), reports the following cases: Case 1, a multipara, had a chill the third day after delivery, with a temperature of 102.2° and feelings of great discomfort. The lochia was scanty, pale and somewhat fetid, and there was tenderness over the uterus. A colomel purge and five grain doses of quinine were given; there was slight temporary improvement, but three days later the temperature was 101.6°, and 10 c c. of antistreptococcic serum were injected, the quinine being stopped. The next day the temperature was normal, and so continued; 5 c.c. of the serum were injected on that and the following day. All unpleasant symptoms subsided and the patient soon recovered.

The second case was a primipara, who was taken with a chill on the fourth day following a difficult case of breech presentation, with laceration of the perineum. Vaginal douches of bichloride (1–2000) were given, and quinine administered. The temperature of 101.2° continuing, an injection of 8 c.c. of serum was given, followed by 5 c.c. on the following two days. The temperature dropped to normal, there was no fetor to the lochia, and the general condition was good. Three days later the temperature rose to 104°, the lochia was very offensive, and there was great tenderness of the abdomen, with some exudation to the left of the uterus. The uterus was irrigated with bichloride solution (1–4000), hot fomentations were ordered for the abdomen, and 10 c.c. of serum were injected. The following day the temperature was 100°, and 5 c.c. of serum were injected. The intra-uterine douche was repeated the following day, and the injections of serum continued for a week. But the temperature remained about 100° for twelve days, rising once to 102°. After that the progress toward recovery was slow but uneventful.

G. T. Howard, of Melbourne (*Intercolonial Med. Jour. of Australia*, Oct. 10, 1897), reports a case of primipara, who was delivered by forceps after a tedious labor, with lacerations of the cervix and perineum. The latter was immediately repaired. Placenta was easily expressed and the uterus irrigated with a 1 per cent. solution of carbolic acid. The next day the

temperature was 101.6°, and on the day following 103.2°. This continued until the fifth day, when curettage was performed, bringing away some shreddy lymph. The temperature persisting on the sixth day, 10 c.c. of antistreptococcic serum was injected; this was repeated twice at intervals of about fourteen hours. Each injection was promptly followed by a fall of temperature, succeeded by a slight rise. After the third injection the temperature was 100°, continuing so for three days, and not until three weeks after the confinement was the temperature normal. Vaginal irrigations of perchloride of mercury were used for a week after the curettage, then carbolic acid was substituted.

T. J. Henry, of Grafton, N. S W. (*Australasian Med Gaz*, October 20, 1897), attended a primipara, aged fifteen years. She had been in labor for twenty-four hours when first seen, and the os was not then fully dilated. After a tedious second stage forceps were applied and a male child, weighing eight pounds, was delivered. There was no laceration. Seven minutes after birth there was a sudden hæmorrhage. The placenta could not be expelled by Credé's method, and the hand had to be inserted into the uterus. Bimanual compression failed to check the hæmorrhage, but injections of very hot water ultimately secured contraction of the uterus No secundines remained in utero. On the fifth day the patient had prolonged rigors, temperature 104 6°. The uterus was irrigated with a 2 per cent. lysol solution. This was followed by a fall of one degree in temperature; 20 c.c. of antistreptococcic serum was injected, and three hours later the temperature was 100°. The following day the temperature having risen to 101°, the uterus was again irrigated, and the injection of serum repeated. In four hours the temperature was normal. A vaginal douche of lysol solution was given the day following, and the patient was up and perfectly well on the eleventh day. The infection was probably due to intra uterine manipulations necessary to control hæmorrhage.

Geo. De Clive-Lowe, of New Zealand (*Australasian Med. Gaz.*, October 29, 1897), reports three cases of puerperal septicæmia. *The first* had been attended by an ignorant midwife, who had broken the cord by traction, leaving the placenta in the vagina. Dr. Clive-Lowe was summoned on the fifth day and found the patient in a state of collapse, with a temperature of 105.5°. The decayed placenta was removed, and the uterus and vagina thoroughly washed with a 1–3000 corrosive solution, and an iodoform suppository introduced. Three injections of 20 c.c. each of serum were given at intervals of twelve hours, and at the end of that period the temperature was only 100°, and all bad symptoms had vanished. On the eighth day the temperature was normal, and an uninterrupted recovery was made.

The *second case* began to show signs of fever on the third day after confinement. Examination revealed a shred of membrane and placenta adherent to the uterine wall. After this was removed the uterus and vagina were irrigated with a 1–3000 corrosive solution, the uterus was gently curetted and again irrigated, and a suppository of iodoform and boracic acid inserted; 20 c.c of serum were injected, the temperature being 104°. Twelve hours later the uterine irrigation was repeated, and 10 c.c. of serum injected. The bowels were thoroughly evacuated by a saline purge and an enema. The temperature was now 99°. Five c.c. of serum was injected the next day, and a fresh packing of iodoform gauze placed in the vagina. The temperature was normal in a few hours, and the recovery speedy and uninterrupted.

On being called to *the third* case the patient was found with half the placenta adherent to the uterine wall on the fourth day after confinement. The temperature was 104°. No serum being at hand the placenta was removed, the uterus curetted and irrigated, as in preceding cases, and the bowels moved with salines. Eight hours later the temperature had fallen to 102°, but went up again to 104.4°. Corrosive sublimate douches were ordered every two hours, and ten grains of quinine given. The temperature gradually dropped, and continued for three days to vibrate between 99° and 100°. At the end of that time it became normal. The breasts in this case were very large and hard, but massage with warm olive oil relieved the tension. In comparing these cases the uninterrupted fall in temperature in the first two cases as contrasted with the vacillating temperature in the third is of interest.

Two Cases of Trismus Nascentium Successfully Treated by Tetanus Antitoxin.

J. Friedman (*Cincinnati Lancet-Clinic*, November 6, 1897), reports two cases of trismus nascentium, one in a girl ten years old and the other in a boy of fourteen days. In both, the umbilicus was suppurating, the jaws were locked and there were fever, convulsions and inability to nurse. Gibier's serum was employed, of which the adult dose is a bottle every six hours. In these cases one-third of a bottle

was used as the initial dose, repeated in six hours. Immediate improvement followed each injection, the amount being absorbed before the time for the next injection; complete recovery ensued, the convulsions being the first symptoms to yield. In all, two bottles of serum were used in each case; in addition, from a half grain to a grain of chloral was given every three hours.

Antipyrin and Lactation.

G. Fieux (*Archieves Clin. de Bordeaux*, October, 1897,) insists that antipyrin is an invaluable remedy for the control of the after-pains, especially in primiparæ. In view of the fact that the pains are often due to the attempts of the uterus to expel clots and the like, he considers antipyrin superior to opium, because the latter drug causes a cessation of the contractions, while the remedy in question allows them to continue, but renders them less spasmodic.

As certain clinicians raised serious objections to the administration of antipyrin to a nursing woman, he made a series of interesting experiments, from which he draws the following conclusions: It is true that antipyrin is excreted in the milk of a nursing woman, but even when given in as large a quantity as four grammes in sixteen hours, it appears in the small ratio of less than 1 in 20,000. It does not influence the quality of the milk in any way whatsoever, nor is the amount of the secretion diminished, especially if the woman continues to nurse. The infinitesimal amount of the drug ingested by the nursling does not seem to exert any detrimental influence upon its general well-being.

Woodbridge Treatment of Typhoid Fever.

Dr. W. G. Weaver, Wilkes-Barre, Pa., in a most interesting article (*Pa. Med. Jour.*, Jan., 1898), details a line of experiences which justify the conclusion: "These cases, taken together, have demonstrated, in a striking manner, the possibility of contagion [of typhoid fever] through food other than milk." But the point of chief interest in the paper relates to his experience and observations with the "Woodbridge treatment." Among other things, Dr. Weaver says: "But we have a new prophet in Israel who asserts that this disease [typhoid fever] is amenable to curative treatment in all its stages, and that death and protracted illness are wholly unnecessary consequences of the disease. He asserts that typhoid fever can always be aborted, and in * * * * a paper [read before] the American Medical Association, 1897, he reports 7,827 cases treated by his method, with 150 deaths, or a death-rate of less than 2 per cent., and a duration of illness of a trifle over twelve days." "Such claims, backed up, as he claims, by 193 physicians, who treated 2,078 cases by his method, with only 105 deaths, or a death rate of only 1.91 per cent., should seriously engage our consideration." "Believing, as I do, that the claims for this treatment are erroneous and untruthful, I shall try to assign some proofs to bear me out in this position."

In the only case treated by Dr. Weaver [Wilkes-Barre City Hospital] by the Woodbridge plan, the temperature was not controlled; hence the Brand treatment was conjoined. The fever lasted 60 days, and the patient required over 100 sponge and plunge baths.

Having, however, had access to the records of the hospital, he has studied the cases treated by this method.

Dr. Woodbridge reports being called to Mrs. Yost about the tenth day of disease—"a typical case of typhoid fever;" temperature 104.5°; pulse varying from 110 to 135, and became dicrotic; bowels tender and tympanitic; marked dullness over spleen; tongue margins red, centre coated; much gurgling on pressure; rose spots; nervous and sleepless; very severe headache. He gave his usual prognosis; "Typhoid is never dangerous if properly treated early."

Two days later, Dr. Yost had typhoid symptoms, nearly as well marked as his wife, though temperature was not so high nor pulse so frequent, and no rose spots. He said he would go home if he were going to bed. Dr. Woodbridge said: "Stay and attend to your practice. I assure you that you will be able at least to see patients in your office every day of your sickness," and he was.

What could be more baneful than to permit and encourage a patient sick with typhoid fever to attend to his usual occupation?

"Can you imagine," adds Dr. Weaver, "anything more ridiculous and fool-hardy than to allow a patient with typhoid fever to eat solid food throughout the entire attack."

Eight days later, Miss Yost was attacked. Temperature the day before seen by Dr. Woodbridge was 104.5°; pulse 100; and all her symptoms characteristic. He directed her to stay in bed three or four days, and said she would be well in ten days, and that she "could eat solid food all the time."

Dr. McCormick, of Williamsport, Pa., has reported 100 cases of typhoid fever treated with calomel and salol. So that it is not as an adjunct to other lines of treatment that Dr. Weaver objects, "but to the claim that cases can be jugulated" by the Woodbridge treatment; and to the claim "that typhoid fever is

no longer a dangerous disease if treated by the Woodbridge method."

Before making the analysis of cases of typhoid fever treated in the Wilkes-Barre City Hospital, Dr. Weaver remarks "that whatever the showing may be, no critisism can be made against the experimenters; for he is a physician of ripe experience and scholarly ability, and is in sympathy with the line of treatment. With this knowledge and understanding of the situation, I give the following as the result of my study of the records of that hospital:

The following *cases were treated by the Woodbridge method*, with such additional treatment as sponge and plunge baths, whiskey, strychnine, etc.:

	Admitted.	Discharged.	Temperature Normal.	Days Fever.	In Hospital.
1. John O'Hara	7-29	9- 9	8-25	27	42
2. Freddie Marx	7-29	9- 8	8-28	30	41
3. Susie Searls	8- 2	10-27	9-29	58	86
4. Fritz Sg	8- 8	9- 5	8-27	19	28
5. Geo. Chapman	8-17	9-13	9- 5	19	27
6. Annie Jones	9- 8	10-22	10-11	33	44
7. Miss McGovern	9-16	10-20	died	34	34
8. Israel Plessett	9-14	10-10	10- 2	18	26
9. Anna Wickezer	9-11	11- 2	10-19	38	52
10. Marx Bergowitz	9-17	10-15	10- 8	21	28
11. Peter Lawler	9-17	10-24	died	7	7
12. John Lawler	9-17	10-17	10-15	28	32
13. Susie McGovern	9-26	11- 6	10-18	23	41
14. And. Kaspowitz	8-25	9-15	9- 3	9	21
15. Edwin Reave	8- 8	9-17	9- 8	31	40
16. Annie Morgans	8- 2	8-25	8-16	14	23
17. Rosa McGovern	9-26	10- 3	died	7	7
			17)	415	579
				$24\frac{7}{17}$	$34\frac{1}{17}$

Cases Not Treated by the Woodbridge Method.

	Admitted.	Discharged.	Temperature Normal.	Days Fever.	In Hospital.
1. Bessie Rudge	5-26	6-23	6-10	15	28
2. Gustave Miller	6-12	7- 2	6-22	10	20
3. Augusta Kisner	6-22	7-31	7-16	24	39
4. Mike Kuskey	6-24	7- 5	died	11	11
5. John Zoptowitch	7-15	8- 5	7-26	11	21
6. Ellen Flynn	7-21	8-25	8- 8	18	35
7. Sam. Searls	7-22	9-18	8-19	28	58
8. Harry Wolf	9-30	10-29	10-14	15	30
9. Terry McGovern	10- 2	10-29	10-22	20	27
10. Mary Champion	10-26	11-22	11- 9	15	27
11. Peter Murphy	10- 1	11-16	11- 6	37	47
12. William Jones	10-20	11- 9	10-29	9	19
13. Frank Bodner	10-20	11-15	died	16	16
14. Louisa Meschoska	7-30	8-17	8- 7	9	19
			14)	238	397
				17	$28\frac{5}{14}$

I am free to admit that the temperature column might be slightly changed one way or the other according to the prejudice of the person making it. I think, however, I have been absolutely fair, and I invite you to inspect the records themselves.* The "days in hospital," however, is an official record with which I have nothing to do. The date of admission and discharge is plainly written upon each record by the hospital officials. The cases above cited represent all that were treated at the hospital between June and November, inclusive, (six months), with the exception of two cases which it was difficult to classify as to treatment.

There Were Giants in Those Days.

Dr. J. H. Kellogg points out (*Good Health*, January, 1898,) that the human race is degenerating in stature as well as in longevity. In proof, he quotes authentic records of measurements of many men more than eight feet in height who lived during two or three centuries prior to the present. In 1555, three brothers, surnamed Og, Gog, and Magog, each over 8 feet in height, guarded the Tower of London. The Duke of Hanover had in his court in the seventeenth century, a yoeman who measured 8 feet 6 inches. Dr. Adam Clark, the famous commentator, measured a man who was 8 feet 6 inches tall. O'Brien, the Irish giant, whose skeleton stands in the museum in the Royal College of Surgery, measured 8 feet 4 inches. It is not probable that there could be collected at the present time from the whole world such a company of men as Frederick the Great's regiment, one of whom, the Scotch giant, measured 8 feet 3 inches.

Lepers in Japan.

A note in the *Medical Press*, Jan. 5, estimates the number of lepers in Japan at about 25,000 or 600 to the million of population.

In connection with lepers, we notice that New York has asked the authorities of the Louisiana Lepers Hospital to take charge of the cases now vagrants in that State. The New Orleans authorities very properly replied that they will do as requested if the New York authorities will guarantee that charges will be paid.

The Widal Test

Is already on the decline, as is the diazo-reaction test. According to the London *Lancet*, the Widal test reaction is frequently not obtainable until other signs and symptoms establish the diagnosis.

* Records exhibited for inspection.

Book Notices.

Text-Book of Diseases of Women. By CHAS. B. PENROSE, M. D., Ph. D., Professor Gynecology, University of Pennsylvania; Surgeon to Gynecean Hospital, etc. *Illustrated.* Philadelphia: W. B. Saunders. 1897. Library Cloth. 8vo. Pp. 529. $3.50 net.

This book is designed for the student and young practitioner—giving rarely more than one plan of treatment for each disease discussed, lest the reader should become confused in the selection of the best. In short, only the best plan, in the opinion of the author, is detailed. Whether such limitation is best for the young graduate remains to be seen. It might be that circumstances may demand an altogether different technique than the one the the author describes. In such an event, the owner of this beok would be in a dilemma—as much so, almost, as if he had no book. It is not that we have a word of criticism to pass upon the recommendations of the author; they are undoubtedly the best, and have the approval of general experience, or else of personal tests, by Dr. Penrose. But in this day, when graduates are supposed to take polyclinic courses—either as assistants to those established in practice, or as house physicians, or as dispensary practitioners, or in colleges set apart for such special work—we believe the work would have greater demand if it had greater latitude—if two or three other plans of treatment than that given were detailed—so as to let the young practitioner select for himself that plan best suited to the individual case. But if we are mistaken in this, then there is no better book to be adopted than this one—print, cuts, and all, are excellent.

System of Medicine. By MANY WRITERS. Edited by THOMAS CLIFFORD ALLBUTT, M. A., M. D., LLD., F. R. C. P., F. R. S., F. L. S., F. S. A., Regius Professor of Physic in University of Cambridge, etc. *Vol.* V. New York: The Macmillan Company. London: Macmillan Co., Ltd. 1897. Cloth. 8vo. Pp. 880.

Diseases of the liver, of the kidneys, of lymphatic and ductless glands, of the respiratory organs, and of the nose, phyrynx and larynx, are the subjects considered in this volume. Of the twenty-five authors, Dr. Reginald H. Fitz is the only one from the United States; Dr. Henri A. Lafleur, of Montreal, is the only one from Canada. But the distinction of these two in their respective countries stands as an index of the high authority of all others in their home.

If this is to stand as Volume V in the regular medical edition, we have not seen Volume IV. But as we are advised that another volume is necessary to complete the *System*, we presume the volume now under notice is the regular issue in what is called the *Gynæcological Series.*

We have had occasion to examine this *System* with special interest, so far as volumes have been received, and are led to class it as the most valuable of the systems of medicine that have come to us for notice. It is full and easy in description, filled with detail that materially assists the thorough understanding of the text, and theory is indulged in only so far as it may help to an appreciation of the facts given. There may be points where experiences of some practitioners may differ from those recorded by the authors of given articles. Thus, Mr. Mayo Robson, Professor of Surgery, appears to discredit the value of olive oil in gallstone, whereas observations are too numerous which point to its value. But it must be remembered that a surgeon is the author of this section, and it is but natural that he should view the questions of treatment through the eyes of the surgeon. Dr. Reginald H. Fitz's articles on diseases of the pancreas deserve special commendation as being practical in diagnosis and treatment. Throughout the work we find a disposition to give prominence to animal extracts in the treatment of diseases of the visceral glands—of the liver, kidneys, the so-called ductless glands, etc.

Manual of Medical Jurisprudence. By ALFRED SWAINE TAYLOR, M. D., F. R. S. *Revised and Edited by* THOS. STEVENSON, M. D., Lond., F. R. C. P., Lond. Lecturer on Medical Jurisprudence and on Chemistry at Guy's Hospital, etc. *Twelfth American, Edited with Citations and Editions from the Twelfth English Edition.* By CLARK BELL, Esq., LL. D., President American International Medico-Legal Congress of 1894, etc. Lea Brothers & Co., New York and Philadelphia. 1897. 8vo. Pp. 832. Cloth, $4.50; Leather, $5.50.

Although the former edition (1892) was up to date, the sessions of the International Congress of Medical Jurisprudence, of the Congress of Medical Jurisprndence of New York, have added facts of most decided value since then. So that, as Dr. Bell expresses it, "it is fortunate that the demand" for this twelfth edition comes just now, when the important advances can be represented. It seems almost superfluous to undertake a review of such a book. It is specially with reference to railroad cases and the like that we find most additions. Now that State Boards of Health, State Medical Ex-

amining Boards, etc , are engaging so much of professional attention, we had hoped to find in this edition something of an epitome of the laws of various States. Such an epitome would be of great value at such an age as this when there is such a variety of law in different States, which variety is of special importance to the young graduate looking for a place in another State to locate. No one is better able to epitomize such laws, and in a book of this kind the epitome would be most acceptable to the profession. But taking the book as it is, it has no equal in value as a text book for medical students, and there is none more valuable for the practitioner who may become involved as a witness in a medico legal case. We do not know how the doctor can well get along without this book—especially this *twelfth edition*—which is so thoroughly up to date.

Manual of Obstetrics By A. F. A. KING, A. M , M. D., Professor of Obstetrics and Diseases of Women and Children, Medical Department of Columbian University, Washington, D. C., and in University of Vermont, etc. *Seventh Edition, with 223 Illustrations.* Lea Brothers & Co. Philadelphia and New York. 1898. Cloth. 12mo. Pp. 574. $2.50.

If one examines this book, there is no reason to wonder at its popularity. From first to finish, it is thoroughly practical, concise in expression, well illustrated by drawings, and includes a statement of nearly every fact of importance discussed in obstetric treatises or cyclo pædias. Its arrangement, too, is progressive, which makes it most suitable for the classroom. The well-arranged index renders the book useful to the practitioner who is in haste to refresh his memory or to learn a fact. This edition is up to date. It contains two additional illustrations and some forty more pages than the Sixth Edition, issued two years ago. The fact that we have had occasion to commend each prior edition, renders it unnecessary to say more with reference to the present edition.

Text-Book of Materia Medica for Nurses Compiled by LAVINIA L. DOCK, Graduate of Bellevue Training School for Nurses. *Third Edition. Revised and Enlarged.* G. P Putnam's Sons, New York and London. 1897. Cloth 12mo. Pp. 240—xli. $1.50. (For sale by Geo. M. West, Richmond.)

Such a book as this is most useful to any professional nurse. In the Introduction, we find a full alphabetical classification of medicines according to their *physiological action*, and also, on other pages, a well-arranged and very valuable "classification of drugs according to their prominent therapeutical actions." A table of poisons: their antidotes and antagonists is given. The metric system is well explained, and the doses of medicines throughout the book are given in both the old and metric systems In making mention of the forms in which medicines are usually prescribed, we find the pill, the powder, etc., but we nowhere find mention of the *capsule*—by far the commonest form in which the solids or powders are now administered. This omission is an oversight.

Text-Book of Practical Therapeutics. *With Special Reference to the Application of Remedial Measures to Disease, and Their Employment Upon a Rational Basis.* By HOBART AMORY HARE, M. D., B. Sc., Professor of Therapeutics and Materia Medica, Jefferson Medical College, etc. *Sixth Edition. Thoroughly Revised and Enlarged.* Lea Brothers & Co., Philadelphia and New York. 1897. 8vo. Pp. 758. Cloth, $3.75; Leather, $4 75.

The author of this *Text-Book* has become eminent in book-making, and long ago distinguished himself as an editor—especially of therapeutic publications. The quick exhaustion of a large issue of the fifth edition has given the author an opportunity to introduce new matter and to rewrite old sections so as to include some of the latest uses of the drugs included in those sections. We cannot, however, altogether agree with him as to the propriety of the exclusion of some subjects still *subjudice.* Matters of serum therapy (beside diphtheria antitoxin) have been before the profession sufficiently long to attract attention, and there are many practitioners who think more or less favorably of results obtained by other antitoxins in other diseases. We scarcely think it right in an author of such a book as the one under consideration, in this day of growing belief in orrhotherapy—whatever be his own persuasions or convictions—not to give at least some of the published facts regarding it. There are doctors all over the country who are studying the effects of various serums, and others would like to test them; but have to look in vain in such a standard professedly up to date work as the one under notice to find even the name of the preparation, the dose, etc. Yet, without such facts stated as we had hoped to find, there is enough matter of practical value relating to medicines, their uses, etc., to keep this *Text-Book* in the very front rank of authorities. While alphabetically arranged as to the order of drugs, the full index has sufficient cross references to make it easy to turn readily to any subject treated of in the work.

Manual of Pathology. *Including Bacteriology, the Technic of Post-Mortems and Methods of Pathologic Research.* By W. M. LATE COPLIN, M. D., Professor of Pathology and Bacteriology, Jefferson Medical College, and Pathologist to Jefferson Medical College Hospital, etc. *Being a Second Edition of the Author's "Lectures on Pathology." Rewritten and Enlarged. With 268 Illustrations, many of which are Original.* Philadelphia: P. Blakiston, Son & Co. 1897. Small 8vo. Pp. 638. Cloth, $3.00.

Although appearing late in the season, "Coplin's Pathology" has become the text-book in a number of the colleges. While, of course, facts cannot be changed, the author approaches his subject in a plain, blunt, practical way that impresses a lesson, and therefore instructs. Thus we do not recall hearing before now that "Essentially, the liver is a mucous membrane, in which the connective tissue which passes through the organ is the basement membrane, and the cell elements of the lobules are the epithelial cells upon which the functional activity of the organ depends." We are pleased with the almost graphic manner in noting differential diagnosis between pathological or bacteriological specimens. Thus the points of difference between bacillus typhosus and bacillus coli communis are well tabulated on page 327; on page 211, we find in tabular form the "diagnostic features of sarcoma and carcinoma," etc. The 100 pages given to bacteriology are in the most practical strain. It is evident that the book has been chiefly made up from notes taken in the laboratory during the process of examination. The great number of original illustrations in a measure attest this. We believe that as soon as teachers become acquainted with this book it will be much more widely adopted as the students' text. To the practitioner, it is what he wants as a work of reference for information.

Practical Treatise on Sexual Disorders of the Male and Female. By ROBT. W. TAYLOR, A. M., M. D., Clinical Professor of Venereal Diseases, College of Physicians and Surgeons, New York, etc. *With 73 Illustrations and 8 Plates in Color and Monotone,* Lea Brothers & Co., New York and Philadelphia. 1897. 8vo. Pp. 451. Cloth, $3 net.

This is a new work, and one of very great practical value to the practitioner. No set of troubles are more distressing to the patient and annoying to the doctor because he has no good book in which to look up the subject, and he neglects original investgation. Even the drawings—all except seven—are new, and are of much service to the student. The book contains thirty-three chapters. The first three relate to the anatomy, structure and physiology of the male sexual apparatus or function; and to the nature and composition of the seminal fluid. The succeeding twenty-two chapters relate to diseases and disorders in the male. The eight succeeding chapters relate to the female—her diseases and disorders, so far as they affect sterility or sexuality. The relations of disease of the testicle, etc., to various infectious diseases are brought out, questions of diagnosis are clearly answered, and the proper plans of treatment are well presented Since the appearance of the papers by Dr. Robbins, of Washington, in the *Virginia Medical Monthly,* some years ago, we do not know of a publication referring to sexual disorders that has been more interesting, and there is none more valuable to the practitioner than this *Treatise.*

Outlines of Rural Hgyiene. *For Physicians, Students, and Sanitarians.* By HARVEY B. BASHORE, M. D., Inspector for the State Board of Health of Pennsylvania. *With an Appendix* on *The Normal Distribution of Chlorine* by Prof. HERBERT E. SMITH, of Yale University. *Illustrated with Twenty (20) Engravings.* 5½ by 8 inches. Pages vi—84. Extra Cloth, 75 cents net. The F. A. Davis Co., Publishers, New York City, Philadelphia, Chicago, Ill.

We wish we could induce country doctors to take the same interest in the study of hygiene that they do in the treatment of disease. The ounce of prevention is worth many pounds of cure. If, through the doctor, citizens could be made to inform themselves on such subjects as naturally come under the title of this volume, much sickness would be prevented, and as a result much more would be made by the farmer or planter. Every paragraph of this little volume is interesting, and something of instruction or valuable suggestion may be obtained from each chapter. Nothing could be more important than the lessons taught with reference to such matters as water supply, waste disposal, the hygiene of habitation—dwellings, schools, churches, etc. We most unreservedly commend this little book to the favorable consideration of the profession, and through the doctor, to the people who have to build or can direct affairs about farms, mills, mines, etc.

Editorial.

Medical Examining Board of Virginia—Change of Date of Meeting 1898.

A month or so ago, we were authorized to announce a change of date of the Spring Session 1898 of the Board. Just as we were going to press January 14 a final change was ordered, but we did not have time to make editorial note of the fact. Now, however, we wish to call special attention of all interested to the change of dates to June 21 as the time for Executive Session of the Board, and to the fact that the Examinations of Applicants for permits to secure license to practice in Virginia will begin promptly in the Capitol, Richmond, Va., at 9 A. M., Wednesday, June 22, 1898, and will continue in regular order through June 24th.

This final change has been made to accommodate graduates of Colleges having their Commencements as late as June 15 or 20.

If Virginia Medical Legislation, No Time to Waste.

During the late session of the Medical Society of Virginia, several matters were agreed upon as of sufficient importance for legislative action; but up to the present moment we have not heard of sufficient activity to indicate that the measures advocated are being pressed upon the attention of legislators. About two-thirds of the session of the General Assembly of Virginia is over—only February remains in which all the unfinished work is to be done.

One of the measures desired was to exempt physicians from disclosing information which they may acquire from patients while attending them, which information was important to enable them to treat the cases properly.

Another proposition was to secure legislation so that no physician nor surgeon be required to testify in court as an expert witness without reasonable compensation.

Another resolution asked that the State license tax upon physicians and surgeons be remitted or abated.

Another sought that the fees in lunacy commissions be increased sufficiently to meet the requirements of such cases.

These were among the several resolutions adopted by the Medical Society of Virginia at its late meeting, with a unanimity that led us to suppose that the measures would all be well formulated in time for presentation early in the session of the General Assembly of Virginia; but up to the present moment we have no evidence that any one of the resolutions has been brought up for consideration. Let all Virginia doctors interested *at once* get to work with their legislators and accomplish promptly what is to be done, for when the Legislature adjourns the latter part of February, they will not again be in session until December. 1899.

Dr. Hunter McGuire

Has been laid up for some weeks with a severe attack of gout. We are glad, however, to state that he has sufficiently recovered to take a few days' trip to New York. It is expected that he will return in time to resume his professorial duties in the Surgical Clinic January 29th in the amphitheatre of the University College of Medicine, Richmond, Va. During confinement at his house, Dr. Joseph Price, of Philadelphia, held one of his clinics, and on the two succeeding Saturdays the clinics were well conducted by Dr. Stuart McGuire, Professor of the Principles of Surgery in the college. On his return, Dr. Hunter McGuire will also resume his duties as surgeon to St. Luke's Hospital. During his absence, they have been performed by Dr. Stuart McGuire, who has for some years been an able assistant to his father.

The Fifth Annual Meeting of the American Medical Publishers' Association

Will be held in Denver on Monday, June 6, 1898 (the day preceding the meeting of the American Medical Association). Editors and publishers, as well as every one interested in medical journalism, are cordially invited to attend and participate in the deliberations. Several very excellent papers are already assured, but more are desired. In order to secure a place on the program, contributors should send titles of their papers at once to the Secretary, Mr. Charles Wood Fassett, St. Joseph, Mo.

The Antipyrin Patent

Held by the Hochst Color Works in Germany expires by limitation (fifteen years) during July, 1898. The price has been about $12.50 a pound, but of course this price will be greatly reduced as soon as its manufacture for sale is permitted to competitors.

The Post-Graduate Medical School of Chicago

Changed its quarters some time ago, and the old building on Harrison street is now being occupied by another school. Prospective patrons will please notice the correct address—2400 Dearborn street.

Resignation of the Board of Health of the State of Louisiana.

The *Picayune* announces the resignation of the members of this State Board of Health. Composed, as it was, of Drs. S. R. Oliphant, Geo. K. Pratt, M. V. Richard, and Messrs. Edward S. Munsell and T. W. Dyer, it will be seen that it will be difficult to fill their places by men as competent. In their letter to Gov. Foster, they state that they resign their commissions "because the numbers of certain commercial exchanges, smarting under recent business losses, and stimulated by hostile newspaper criticisms of this Board, have assumed the prerogative of voicing public sentiment." It seems that a proposition was made by or on behalf of "certain commercial exchanges that the Board, during the recent yellow fever epidemic, should keep a double set of books—one true and reliable, so as to get at the real facts; and the other, false records of the number, spread, gravity, and general character of the epidemic, so as to deceive the press and the people. The *Texas Medical Journal* affirms that such attempted deception, on the part of those of the commercial exchanges interested in the removal of the Board, "only emphasizes the charges that were made against certain New Orleans firms, that they were trying to smuggle goods (and with them infection) out of New Orleans into Texas, and else where, in violation of law, and with a reckless disregard of consequences that is criminal. * * * The names of the prime movers in slaughtering these officers should be known and marked with a black cross-mark." The gentlemen, in resigning, annex a statement re viewing the yellow fever epidemic from the first suspicion, and give the history of the Board's action up to the 6th of September, 1897.

Pension Examining Surgeon, March 5, 1898.

The U. S. Civil Service Commission announces that on March 5th, 1898, an examination will be held at Washington, and at other places throughout the United States, for the position of Pension Examining Surgeon. As the result of this examination, vacancies will be filled at Bridgeport, Conn., Lynn, Mass., Washington, Ind., and Vicksburg, Miss.

Applicants must be graduates of reputable medical colleges, and not barred by State or other laws.

Persons who are legal residents of the places where the vacancies exist will be given preference in appointment.

The subjects of the examination are as follows: Thesis, anatomy and physiology, physical diagnosis, general and special pathology, and surgery. The subject of the thesis will be upon some common medical theme, and each competitor will be required to write not less than 250 nor more than 500 words.

Persons desiring to enter this examination should at once write to the U. S. Civil Service Commitsion at Washington for application blanks—Forms 304 and 375, which should be properly executed and promptly filed with the Commission at Washington. No applications will be accepted after the hour of closing business on Friday, February 25.

The Seaboard Medical Association.

Ninety nine doctors of Tidewater Virginia and North Carolina met in Norfolk, Va., Jan. 20th, 1898, and perfected an organization to be known as the *Seaboard Medical Association*. It will meet in January and in July of each year in Norfolk, or within thirty miles of it, and in North Carolina alternately. Only graduates of regular medical colleges who are physicians in good standing are admitted to membership. The officers elected for 1898 are: *President*, Dr. Junius F. Lynch, Norfolk; *Vice-Presidents*, Drs. Thomas Riddick, Perquimans, N. C., and J. H. Peek, Hampton, Va.; *Secretary*, Dr. J. E. Phillips, Suffolk, Va; *Treasurer*, Dr. Lomax Gwaltmey, Norfolk, Va. On the 20th, Dr. Southgate Leigh, of Norfolk, lectured on the *X-Ray*, exhibiting the workings of the apparatus, and afterwards entertained the members at his home. A number of papers were read, and the meeting was a great success.

Dr. M. W. O'Brien, of Alexandria, Va.,

Is taking a private course in operative surgery under Dr. Dawbarn, at the New York Polyclinic Medical School and Hospital. Such a course in a metropolitan clinic must prove a valuable assistance to any one—even to one who does so much of operative work as does Dr. O'Brien in his section.

Dr. Joseph Price, of Philadelphia,

While professionally in this city January 8, 1898, held the Surgical Clinic for Dr. Hunter McGuire in the amphitheatre of the University College of Medicine, Richmond. He selected cases of abdominal surgery for his lecture and operations, and gave valuable instruction to the immense gathering of students and doctors of the city. Virginians feel a pride in claiming him as a native; for he has contributed

many original operations to surgery, and has all along been so successful in results as now to be ranked among the leading abdominal surgeons of the world.

Saml. D. Gross' Prize of $1,000.

The second quinquennial prize of $1,000, under the will of Saml. D. Gross, will be awarded January 1, 1900. The prize shall be awarded every five years to the writer of the best original essay, not exceeding 150 printed pages, 8vo., in length, illustrative of some subject in surgical pathology or surgical practice, founded upon original investigations, the candidates for the prize to be American citizens.

The successful competitor shall publish his essay in book form, and deposit a copy in the Saml. D. Gross Library of the Philadelphia Academy of Surgery. All interested in further information should address Dr. J. Ewing Mears, 1429 Walnut street, Philadelphia, Pa.

The Medical Examining Board of Virginia

Has again changed the date of its meeting. This time to June 21st, 22d, 23d, and 24th. Examinations will begin *Wednesday* morning, June 22d—the meeting Tuesday evening being only for organization, etc.

Obituary Record.

Dr. Joseph O'Dwyer

Died of tubercular meningitis, January 7th, age 55. He diagnosed his own fatal disease, and resigned himself to the consequences. It was while associated with Dr. J. Lewis Smith, and the late Dr. Chas. Carroll Lee, as a visiting physician to the New York Foundling Asylum, that he demonstrated the value of intubation as a substitute for tracheotomy. He graduated from the College of Physicians and Surgeons, 1866.

Mr. Ernest Hart,

Editor of the *British Medical Journal* since 1866, at one time ophthalmic surgeon and lecturer on ophthalmology at St. Mary's Hospital, a distinguished sanitarian and author of "the Hart Act" for the betterment of sick poor in workhouses, etc., died in London, January 7, age 61. He received his education from the City of London School and the School of Medicine of St. George's Hospital. While a man possessed of some elements of greatness, he was rather too dogmatic or overbearing in discussion to make himself popular with American doctors accustomed to freedom of personal opinion and of speech. But his contributions to the causation and prevention of typhoid fever, of cholera, etc., must long be recognized as standard papers on such subjects.

Dr. Zacharin,

Lecturer on the functions of the heart at the Imperial College of Medicine at Moscow, died January 5 From exchanges, we learn that he was eccentric in dress, brusque and exacting with patients—compelling them to sit motionless before him and not to irritate his sensitive nervous system—and his fees were exorbitant. Beside payment of these, he demanded of patients of highest rank that all his whims be respected. He attended the Czar in a dressing gown and a peasant's top boots, and compelled him to alter the arrangement of furniture in the rooms he occupied in the palace. He declined to lunch with the Czarina "because he was not in the habit of taking his meals with women" His eccentricity was marked in his controversies with Dr. Leyden, of Berlin, and other consultants, as to the Czar's fatal illness, in 1894. He even refused to sign the official report of the Czar's death, and threatened to leave Licadia (where the Czar died) and return to Moscow, but was prevented by military command. Indeed, so eccentric had been Dr. Zacharin's actions that the Czar's death was laid at his door. So that when the news of the death of Alexander III reached Moscow, the people tore down the doctor's house and burned his furniture. The new Czar, Nicholas II, however, soon forgave him and presented him with a jewelled snuff-box, and the students gave him an enthusiastic welcome on his return to Moscow.

Well Paid.

From the *Medical Press*, Jan. 5, we learn that Mr. C. Vanderbilt, of New York, and family, has just left Marseilles for a three months' cruise in the Mediterranean in his yacht. As the doctor of the party, he selected the son of the late Prof. Charcot, of Paris, to whom he gives £22 a day (about $90), for looking after the health of his illustrious family.

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Original Communications.

REPORT ON THE PROGRESS OF SERUM-THERAPY IN GENERAL—IN VIRGINIA ESPECIALLY.*

By ARTHUR JORDAN, M. D.,
LANDON B. EDWARDS, M. D.,
ERNEST C. LEVY, M. D.,
Richmond, Va.,

Committee of Investigation appointed by the Richmond Academy of Medicine and Surgery, etc.

To the Fellows of the Richmond Academy of Medicine and Surgery:

Your committee, appointed April 13, 1897, begs leave to submit the following report upon "The Progress of Serum-therapy."

The first mention of the employment of the idea of serum-therapy is that in the recorded practice of inoculating patients as a prophylactic measure against smallpox, employed at the beginning of the eighteenth century in Turkey. Inoculation gave way before the more desirable method of vaccination. The number of lives which Jenner's discovery has saved is well nigh incalculable. The first mention of the use of serum is to be found among the Germans, who employed the treatment under the name of *Isopathy*, about the middle of this century. To what extent it was used, and with what success it was credited by them, is not definitely stated, but it must have impressed them favorably, for a variety of isopathic preparations made their appearance under such names as "phthisin, hydrophobin, scarlatinin," etc.*

DIPHTHERIA.

The history of the development of the antitoxin treatment of diphtheria is so well known, and its acceptance now so universal, that it would be useless, even if the limits of this report rendered it possible to go fully into details on these points. Even at the time that your committee was appointed it could be said that a sufficiently extensive trial of the antitoxin treatment of diphtheria had been made to remove the fears which many had entertained as to its action, and to place the remedy in an assured position as one of inestimable worth.

During the past year statistics from many and varied sources have appeared, all tending still further to increase the confidence of the profession in the remedy, and to demonstrate the saving of life which it has accomplished. Many who were sceptical have been convinced by the unanswerable argument of statistics whose authenticity could not be questioned, until to-day it may be said that but few physicians, indeed, who have given the subject careful consideration do not accord to the remedy even more value than was at first claimed for it by its staunchest advocates.

Only two sets of these statistics will be referred to, not because they are more favorable than others, but on account of the large number of cases recorded in them, and because they represent such diversity in the class of cases treated.

The report of the committee of the American Pediatric Society, presented at its last meeting, includes 1,704 cases of laryngeal diphthe-

*Presented to the Richmond Academy of Medicine and Surgery, January 25, 1898, and, on motion, it was made the *Subject for Discussion* during the meeting held February 8.

* New York Medical Times, vol. 24, p. 67.

ria which occurred in the practice of 422 physicians in the United States and Canada. In this report the following points are among the most prominent: Before the use of antitoxin it was estimated that 90 per cent. of laryngeal diphtheria cases required operation, whereas now, with the use of antitoxin, only 39.21 per cent. require it. The mortality in the whole series of 1,704 cases was 21.12 per cent. (360 deaths). In the non-operated cases the mortality was 17.18 per cent. (178 deaths). The mortality in the operated cases (27.24 per cent. —182 deaths) shows even more remarkable results. Before the use of antitoxin only 27 per cent. *recovered;* now only 27.24 per cent. *die.*

The other report to which reference will be made is the "Second Report of Medical Superintendents upon the Use of Antitoxic Serum in the Treatment of Diphtheria in the Hospitals of the Metropolitan Asylum's Board during the year 1896." (London). In these hospitals during 1896 antitoxin was used in 71.3 per cent. of all cases of diphtheria, the remedy not being employed in moribund, mild, or doubtful cases. The total death rate during 1896 (under antitoxin) was 20.8 per cent.; that of 1894 (without antitoxin), although then considered remarkably low, was 29.6 per cent. This represented a saving of 365 lives. It is well known, however, that only during the early days of the disease does antitoxin exert its full beneficial effect; and hence, while the above figures show a difference in the total death rate of only 8.8 per cent., the difference in cases treated on the first day was 17.8 per cent.; on the second day, 14.2 per cent.; on the third day, 11.7 per cent.; on the fourth day, 9.1 per cent., and on the fifth day or later, 6.2 per cent. Laryngeal cases were attended with a mortality of 62 per cent. in 1894; 29.6 per cent. in 1896. Operated laryngeal cases had a death rate of 70.4 per cent. in 1894; 41 per cent. in 1896. It is the opinion of the superintendents that there has been no reduction in the frequency of complications of the disease as a result of antitoxin treatment, except in the case of nephritis, which occurs less often. In fact, it would seem as if the other complications occur even more frequently than formerly. This, however, is only apparent, and is due to the closer observations which are now made, and, even more, to the fact that many severe cases, which would have died under other treatment, now recover, and these are naturally more prone to develop complications.

In this report the general results of antitoxin treatment are summed up as follows: 1. Diminution of faucial swelling; 2. Lessening of irritating and offensive discharge from the nose; 3. Limitation of extension of membrane; 4. Earlier separation of exudate; 5. Limitation and earlier separation of membrane in laryngeal cases; 6. Improvement in general condition and aspect of patients; 7. Prolongation of life, in fatal cases, to an extent not obtained with former methods of treatment.

It has been claimed by those who refuse to recognize the value of diphtheria antitoxin, that the favorable results shown in the statistics of the past few years are due to other factors than the employment of antitoxin. By some it is held that the type of the disease has become milder; others that since the widespread application of bacteriologic diagnosis, cases are now called diphtheria which were formerly not so classified; or, again, that moribund cases and cases treated after the fifth day of the disease are excluded in many of the statistics. The first report to which reference has been made above, answers fully the first objection, since it deals with only laryngeal cases, and laryngeal diphtheria can never be considered mild. In the report of the Metropolitan Asylum's Board Hospitals mild as well as moribund cases were not injected. As regards the influence of bacteriologic diagnosis, it is a fact which no one acquainted with the subject will dispute that the number of cases which would formerly have been considered diphtheria, but which are now excluded from the statistics by bacteriologic investigation, far exceed those in which the reverse is true.

While the above are strong replies to the criticisms of the opponents of antitoxin, we are indebted to Park* for a table of statistics against which none of the usual objections can be urged. This table, compiled from the official records of Berlin, Paris and New York, shows the absolute death rate per 100,000 inhabitants in these cities from diphtheria and croup from 1886 to 1897 inclusive. There is here no room for asserting that the statistics have been twisted to favor any plan of treatment, that any special class of cases has been excluded or included, and yet the reduction in mortality in all three of these cities since the introduction of antitoxin is remarkable and too uniform to be the result of mere coincidence. This table is of such interest that it is here appended:

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* Park, Wm. H.: Contributions of Bacteriology to Therapeutics. Wesley M. Carpenter Lecture for 1897.

ABSOLUTE DEATH RATE FROM DIPHTHERIA AND CROUP PER 100,000 POPULATION.

Year.	Berlin.	Paris.	New York.
1886	125.7	73.2	187.5
1887	100.7	76.9	206.6
1888	76.1	83.7	167.7
1889	85.6	79.9	146.2
1890	102.0	77.5	110.6
1891	67.5	63.0	118.7
1892	92.9	63.6	123.3
1893	100.8	51.4	145.5
1894	86.7	40.7	158.5
1895	†59.7	17.7	105.2
1896	30.9	17.6	91.3
*1897	26.4	17.2	86.4

*Last quarter of year estimated.
†General use of antitoxin commended.

As regards actual advances in the antitoxin treatment of diphtheria, the chief of these seems to be the production of more potent and trustworthy serums and the attention to details in its manufacture, whereby its efficacy has been increased and many of its objectionable features diminished. Rashes and joint symptoms following its use are now somewhat less frequent than formerly.

The preparation of dried serum has not yet been brought to a sufficient degree of perfection to supplant the ordinary product, while "we have no more hope than we had five years ago of separating antitoxin completely from the horse serum."*

During the past few months the Health Department of New York city has been testing the comparative frequency of rashes after the use of filtered and unfiltered serums. Your committee is indebted to Dr. Wm. L. Somerset, Resident Physician Willard Parker Hospital, for the following statement, which is an approximate one, of the results obtained: Previous to the employment of filtered serum, rashes occurred at the Willard Parker Hospital in from 25 to 30 per cent. of all cases; since the use of filtered and unfiltered serum in parallel cases, the percentage of rashes where filtered serum was injected has been reduced to about 15 per cent., while it has risen to about 40 per cent. where the unfiltered product was employed. The higher percentage of rashes in the latter class of cases than formerly, is due to the fact that the unfiltered serum used in these cases contained the residue from the filtered portion. It would thus appear that the production of rashes is caused largely by some constituent of the serum which is incapable of passing, or passes only in small amounts, through unglazed porcelain.

* Park, loc. cit.

The use of antitoxin as a prophylactic measure has been steadily gaining ground, and with the production of a serum from which all objectionable features have been eliminated, its use in this direction will doubtless become even more popular; though, from the temporary nature of the immunity afforded, it must remain a measure to be adopted only in the presence of epidemics or in cases where exposure has undoubtedly occurred.

Yellow Fever.

In 1854 and 1855, inoculation, as a preventive measure, was made use of in Havana during an epidemic of yellow fever. In 1887, this idea was again introduced and followed up very thoroughly in Brazil. But in neither instance were the results satisfactory. In 1892, Domingo Freire introduced a diluted virus derived from the micrococcus xanthogenicus, which he held to be the etiological factor in the development of yellow fever. This diluted virus was advocated as a preventive inoculation by Dr. Belinger, of San Francisco, Dr. J. McFadden Gaston, of Atlanta, and others during 1893 and 1894; but the results have been disappointing. About the same time, in 1893, Dr A. S Ashmead recommended "Murray's immunizing method" as follows: Inoculate with the blood serum of a partially immune subject (negro), and inoculate a second time with perfectly immune blood serum of a white subject who has had yellow fever. Before inoculation, however, as frost always modifies the virus, let the infected serum be first exposed to frost. Follow at once with a second inoculation of immune blood serum" Disappointments likewise followed the use of this method.

In July, 1897, Prof. G. Sanarelli, of the University of Montevideo, isolated and cultivated a bacillus which he considers to be the specific organism of yellow fever. Probably it is the same bacillus as that formerly described by Surgeon General Sternberg. Possibly both may ultimately be proven to be secondary invaders. However, Sanarelli has been occupying himself since last summer in the securing of a protective or curative serum, about which most encouraging reports have been already made. And yet scarcely is the hope born that at length we have a protective or curative agent with which to meet yellow fever before adverse reports are coming in to indicate that we must wait and see.

Tuberculosis.

The medical world was startled in 1890 by

the announcement that Koch had discovered a remedial agent for phthisis. This announcement was hailed with joy, and it was immediately put to the clinical test, but its virtues, so ably set forth by its discoverer, soon began to minimize, and finally it fell into disrepute as a curative remedy. Since the introduction of tuberculin, several serums have been brought forward, and have been tried with varying success by many physicians.

Among the most popular of these preparations are the serum of Prof. E. Maragliano, of Genoa, obtained from the dog, the ass, and the horse. When treatment was begun as late as the formation of cavities in the lungs, he claims a *cure* of 7.76 per cent. In non-febrile tuberculosis, his successes have amounted to nearly 100 per cent. of recoveries. He recommends that 1 c. c. of the serum should be the dose injected subcutaneously every second day. In febrile forms, the dose may be increased for several days—5 to 8 days—to 5 and even 10 c. c. Such are the contradictory reports as regards successful use of Maragliano's serum by different doctors that it is difficult to come to a fixed opinion on the subject.

What has been said in general of Maragliano serum applies in the main to the published results of the use of the antitubercle serum introduced in 1895 by Dr. Paul Paquin, of St. Louis. That it is useful when administered with other remedies is more than probable.

Early in 1896, Koch introduced what he called T. R. Tuberculin, and this was followed by encouraging reports of its use. But it was not long before the process of its manufacture was found to be faulty in that, notwithstanding the centrifugation, it was discovered that in a large number of the preparations on the market tubercle bacilli remained in the fluid. This being recognized as an error of manufacture, it has been withdrawn from market—certainly until the fault of its manufacture can be remedied.

Antiphthisin is a sozalbumin, introduced some years ago by Klebs, which he regards as the germicidal part of tuberculin. Von Ruck "attests its absolute safety, and considers that it has curative properties."

But the early disappointments in practice of the serum treatment of tuberculosis have made the profession skeptical as to the remunerative value of any and all such methods of treatment; and yet it is evident to the non skeptical who reviews the experience of unbiased practitioners that it is probable that whatever may be found curative of tuberculosis, one of the measures to be used will be perfection of some of the antitoxines so-called. It is the opinion of many that the scientific worker is getting in the neighborhood of the real remedy, and is probably knocking at a door of the house in which the truth is to be found.

Typhoid Fever.

Chantemesse and Widal found, in 1888, that susceptible animals could be rendered immune by inoculating them with a culture of the typhoid organisms which had been rendered sterile by heat.

Following this line of investigation, serum-therapy has been employed in typhoid fever. However, with the most persistent use of this substance, the results in this disease have been unsatisfactory.

Scarlet Fever.

An antistreptococcic serum has been employed in this affection, and while it does not seem to have any efficacy in the scarlet fever itself, yet, from a certain number of observations made by Roux, it appears to have a favorable influence on the complications due to the streptococcus, and which are so common in this malady.

Typhus Fever.

In a prison at Bongie, from November 25th to December 12th, 40 cases occurred, with two deaths. Serum-therapy was commenced December 12th, the serum being obtained from patients who had recovered. From 2 to 6 c.c. were injected into each of 39 cases, and only one died. Legrain noted fall of temperature, improvement in pulse, disappearance of fever, and the severe cases soon became mild in type.

Although this disease is rare, owing to improved hygienic measures, yet, from the favorable report of serum in its treatment, it is to be hoped that the rate of mortality will be kept lowered in those instances where the disease gains a foothold.

Rabies.

Tizzoni and Cattani reported that serum of animals, rendered immune to hydrophobia, has the power of conferring immunity and arresting the disease when already developed. So far no trial has been made in man. If successful here, its value will surpass the treatment of Pasteur, in that the latter may produce immunity, but cannot cure the disease if once developed.

Leprosy.

Carrasquilla treated a number of cases of leprosy with serum, and in fifteen cases of the

anæsthetic type secured a remarkable degree of success. Medina, commenting on this treatment, sums up as follows:*

"The sensation is restored more or less rapidly according to the extent and gravity of the lesions of the peripheral nervous system. Distinct patches lose their abnormal color without disappearing entirely. Œdema subsided rapidly in some cases, slowly in others. The skin shrinks and resumes its physiological condition after the absorption of the œdema. The tubercular variety shrinks, breaks down, and disappears by absorption, desquamation, or suppuration, leaving traces of their existence at the affected spots. Ulcers, after having presented copious purulent secretions, rapidly clear off and are covered with healthy skin; scars from former suppurative lepromata fade and tend to assume the same level as the surrounding skin. Ulcerated mucous membranes fade like the skin and recover sensibility, while the tubercules break down. The face loses its leonine appearance. Lastly, the patient recovers his appetite, the ability to sleep, and the mental state improves."

Sarcoma and Carcinoma.

Varying success has attended the use of bacterial products in inoperable malignant disease. Coley, who has done a great deal of work in this class of cases, secured greater success with the treatment in sarcoma than in carcinoma. The conclusions of the New York Surgical Society, which may be considered as a conservative survey of the efficacy of this treatment in malignant diseases, are as follows:†

"(1) The danger to the patient from the treatment is great.

(2) The alleged successes are so few and doubtful, the most that can be said for the treatment is that it may offer a slight chance of improvement.

(3) Valuable time has been lost in operable cases by giving the treatment a trial before operating.

(4) The method should be absolutely confined to inoperable cases."

Syphilis.

Richet and Haricourt were the first to try injections of serum in the treatment of syphilis. They report two cases, one resulting in a cure, the other showed marked signs of improvement—the ulcerated surface decreasing four-fifths in size Pellizzari and Neuman have employed blood in its treatment, but no satisfactory results were obtained.

Streptococcic Infections.

In *erysipelas*, Marmoreck used the antistreptococcic serum in 413 cases in which the mortality was 3.87 per cent. against 5 per cent. prior to the use of serum. In 165 cases of erysipelas alone, the mortality was 1.2 per cent. As a result of the use of the serum, he noticed an improvement in the general condition, fall of temperature, and local improvement.

Puerperal fever has been treated by this plan with a certain degree of success. It has not proven as useful in this disease as there was reason to expect at the first mentioning of the subject.

The serum has also been used with success in acute hæmorrhagic septicæmia, erysipelas neonatorium, acute general septic peritonitis, purulent cellulitis of the face, cerebro spinal meningitis, etc.

Pneumonia.

Klemperer, in 1892 and 1893, published his researches as to the treatment of serum therapy in six cases with good results. Mosny, Bonone, Emmerich, and Pansini following up this idea, obtained practically the same results as Klemperer. On the other hand, Hughes and Carter, in 1894, reported the injection of the serum of patients just recovered from pneumonia in ten cases of this disease, and they had no reason to consider the treatment efficacious.

Cholera.

Many experiments have been made in cholera, chiefly as inoculations, and these mostly in animals until recently. During an epidemic of this dread malady in Spain, 50 per cent. of those attacked died. After inoculation was used, the rate of mortality was reduced to 25 per cent.

Influenza.

The bacteria of influenza was discovered in 1892. Rabbits were inoculated with cultur . and after they had been proven immun , the blood serum was used on men suffering from influenza with varying success.

Tetanus.

Behring and Kitasato were the first to produce in the blood of animals a distinctly potent and valuable antitoxic substance. In 1892, Dr. Rudolph Schwarz reported the first success with tetanus antitoxin in man. Cases of cure have been reported from time to time which

*Report to the National Academy of Medicine of Columbia, at Bogota, 1895.

†Annals of Surgery, July, 1896.

gradually increase the per cent. of recoveries. It may be very properly asked why the success with serum in this disease is not so favorable as that in diphtheria—the two antitoxins being "so nearly identical in their efficacy as agents for immunization?" The answer may be found "in the manner" in which "the two infections begin and progress."* "The tetanus affection advances for from five to ten days undetected in the wound, the toxins develop unnoticed, cause their deleterious effect, and only after general poisoning has occurred is the disease detected.

The diphtheria infection starts on the surface, and before its toxins are fully developed and absorbed, it is diagnosticated by the appearance of its exudate, the husky voice, or the nasal obstruction. At this time we could also arrest the tetanus infection. If we allow this time to pass by, then, as in tetanus, after the constitutional poisoning has taken place, the antitoxin is usually of no avail."

An improvement in the form of tetanus antitoxin is the solid variety. It is claimed that this preparation can be kept indefinitely, and is ready for use at any time by simply dissolving it in water.

The serum treatment has been extended considerably in its scope, so that at the present time few of the more infectious diseases, to which mankind is liable, have not been considered by the experimental bacteriologist. In addition to the diseases above referred to, may be mentioned the *bubonic plague*, anthrax, alcoholism, acute delerians mania, glanders, pleuropneumonia, foot and mouth disease, chicken cholera, hog cholera, and bites of reptiles, as other diseases in which serum-therapy has been employed.

Serum Therapy in Virginia.

Having briefly reviewed the progress of serum therapy from its incipiency up to the present time, the committee thought it advisable to ascertain the extent to which this class of remedies had been employed in our own State. With this object in view, circular letters were sent to the members of the Medical Society of Virginia, and to such other physicians in the State as the committee had reason to believe had employed serum treatment. In this communication information was requested under four headings—diphtheria, tuberculosis, tetanus, and the diseases for which antistreptococcic serum is employed. Under the respective headings replies were sought upon the leading points of interest likely to arise in the course of the disease under consideration.

In response to about one thousand of the above letters of inquiry, the committee received reports from seventy nine physicians. Thirty-five of these state that they have not employed serum in their practice, giving as their reason, in all but four instances, lack of opportunity to test the same. The reason of non-employment of the remedy by these four is stated to be disbelief either in the efficacy of the treatment or in the theory upon which its application is founded.

Of the forty-four who have employed serum, thirty-one used it in diphtheria alone; six in tuberculosis; one in tetanus; four in diphtheria and tuberculosis; one in diphtheria and tetanus, and one in diphtheria and puerperal sepsis. The total number of cases reported was 151, there being 100 cases of diphtheria, 48 of tuberculosis, two of tetanus and one of puerperal sepsis.

The committee feels confident that these figures do not represent the entire number of cases in which antitoxin treatment has been employed in Virginia. Although every effort was made to secure reports from all physicians in the State who had employed serum treatment, many who have used the remedy failed to respond to the letters of inquiry, and in other instances the reports were received too late for tabulation.

The reports received on diphtheria embrace one hundred cases occurring in the practice of thirty-seven physicians. The following tables, compiled from these reports, show the results obtained:

TABLE II.—*Classification of Cases.*

Laryngeal	14
Laryngeal and tonsillar	4
Laryngeal and pharyngeal	2
Laryngeal, tonsillar and pharyngeal	3
Laryngeal and nasal	1
Tonsillar	12
Pharyngeal	7
Nasal	1
Tonsillar and pharyngeal	14
Tonsillar and nasal	1
Tonsillar, pharyngeal and nasal	3
Pharyngeal and nasal	1
Tonsillar, pharyngeal, nasal, buccal and vaginal	1
General	3
Not stated	33
Total	100

*The Wesley M. Carpenter Lecture for 1897. By Wm. H. Park, M. D.

TABLE III.—*Type of Disease.*

Type.	Cases.	Cured.	Died.	Per Cent. of Deaths.
Laryngeal	24	21	*3	12.50
Non-laryngeal	43	40	**3	6.97
Not stated	33	31	2	6.06
Total	100	92	8	8.00

* One death from broncho-pneumonia 21 days after diappearance of membrane.

** One case moribund when first injected.

TABLE IV.—*Severity of Disease.*

Type.	Cases.	Cured.	Died.	Per Cent. of Deaths.
Mild	14	13	*1	7.14
Severe	39	37	2	5.13
Malignant	20	17	3	15.00
Not stated	27	25	2	7.41
Total	100	92	8	8.00

* A case of tonsillar and pharyngeal diphtheria in a child of five years; 1,500 units injected on second day of illness; 1,000 units eight hours later. Died suddenly four hours after second injection.

TABLE V.—*Bacteriologic Examination.*

	Cases.	Cured.	Died.	Per Cent. Died.
Made; result positive	23	21	2	8.70
" " negative	*1	1	0	0.00
Not made	39	35	4	10.25
Not stated	37	35	2	5.40
Total	100	92	8	8.00

* Laryngeal.

TABLE VI.—*Day of Injection.*

Injected on	Cases.	Cured.	Died.	Per Cent. of Deaths.
First day of illness	3	3	0	0.00
Second day of illness	15	13	*2	13.33
Third day of illness	17	15	2	11.76
Fourth day of illness	9	9	0	0.00
Fifth day of illness	5	5	0	0.00
After five days	7	5	2	28.57
Not stated	44	42	2	4.54
Total	100	92	8	8.00

* Case noted in Table IV.

TABLE VII.—*Serum Used.*

Name of Maker.	Cases.	Cured.	Died.	Per Cent. of Deaths.
Behring	26	24	2	7.69
Roux	1	1	0	0.00
Parke, Davis & Co.	29	27	2	6.90
H. K. Mulford Co.	4	4	0	0.00
U. S. Marine Hospital	6	5	1	16.67
Not stated	34	31	3	8.82
Total	100	92	8	8.00

TABLE VIII.—*Initial Dose.*

Number of Units	Cases.	Cured.	Died.	Per Cent. of Deaths.
Under 500	1	1	0	0.00
500–1,000	9	8	1	11.11
1,000–1,500	15	14	1	6.67
1,500–2,000	16	15	1	6.25
Over 2,000	2	2	0	0.00
Not stated	57	52	5	8.77
Total	100	92	8	8.00

TABLE IX.—*Repetition of Injection.*

Was Dose Repeated.		Cases.	Cured.	Died.	Per Cent. of Deaths.
Repeated.. No. units	500–1000	3	2	1	33.33
	1000–1500	9	9	0	0.00
	1500–2000	4	2	2	50.00
	Over 2000	*1	1	0	0.00
	Not stat'd	**37	33	4	10.50
Not Repeated		25	25	0	0.00
Not stated		21	20	1	4.76
Total		100	92	8	8.00

* Repeated three times, 1,000 units at each injection.

** One case repeated twice.

Average time of improvement after injection of antitoxin, in 47 cases stated, 12.1 hours.

Average time of disappearance of membrane, in fifty cases stated, 7.1 days.

Rashes occurred as a result of the antitoxin in eight cases—seven urticarial and one macular. *Joint affections* occurred in two cases. The less frequent occurrence of these symptoms after the administration of antitoxin shows an improvement which may fairly be attributed to the smaller amount of serum which it is necessary to inject since higher potencies have come into general use; although the possibility of the occurrence of rashes being overlooked in private practice should not be forgotten.

Of the twenty-four laryngeal cases reported, three were operated (tracheotomy) with two recoveries and one death. Unfortunately, dosage was not stated in any operated cases.

Complications. Albuminuria occurred in seven cases, one of which seemed to be favorably influenced by the antitoxin. In one case with complications of broncho pneumonia, acute nephritis and paralysis, these complications improved after second injection.

Of the hundred cases reported, all except one were in white subjects.

The total number of cases reported is rather small to permit of deductions in certain directions, and this fact is also responsible for the appearance of certain discrepancies in the above tables. Thus the mortality in cases reported as mild (7.14 per cent.) is greater than that in cases reported as severe (5.13 per cent.). There was only one death among the mild cases, the cause of which was not clear to the physician, but this one death has the effect of causing in the table the curious result noted.

Of the fatal cases, one was moribund when injected. One died of broncho pneumonia, on the thirty-third day of illness, three weeks after complete disappearance of the membrane. The third fatal case, one of laryngeal diphtheria, was not seen "until a few hours before stenosis required operation" (tracheotomy). In this case, there was temporary improvement after the first injection. The fourth fatal case, one of laryngeal and nasal diphtheria in a colored infant ten months of age, was brought from a distance to the office of the physician who administered the serum. Two injections, 500 units each, of antitoxin were given, resulting in some improvement. The child died on the day following the second injection, under circumstances not known to the physician reporting the case. In three of the fatal cases, no data whatsoever were given. In the eighth fatal case, attributed to heart failure, the attending physician, in making his report, states, "I think the serum must have had something to do with the cardiac failure."

The above report, showing a mortality of only eight cases in a hundred, in one of the most dreaded and hitherto fatal of the acute infectious diseases, is in keeping with the universally favorable statistics which have, from time to time, been tabulated and published from other sources, both in hospital and private practice. Although, from the number of reports received, it will be seen that Virginia physicians have followed a conservative course in adopting this method of treatment, yet the popularity of the remedy is steadily and rapidly increasing.

While appreciating the valuable assistance rendered the committee in this, the first attempt in the State to collect data relating to any special line of treatment, it was to be expected that the resulting report could not be wholly satisfactory, owing to the incomplete nature of many of the individual reports received. The difficulty encountered by the committee from this source emphasizes the advisability of physicians keeping a careful and accurate record of important cases, especially those treated by methods whose full value is still under investigation.

A glance at the above tables will show that upon even the most important points the information was, in many instances, deficient.

Thus the age of patient was not stated in 34 cases; type of disease in 33 cases; severity of disease, in 27 cases; day of injection, in 44 cases, and dose of antitoxin, in 57 cases—yet, these are the five most important and vital factors in the compilation of statistics relating to diphtheria as treated by antitoxin.

In only 24 cases was a bacteriologic examination made. The importance of having bacteriologic conformation of the clinical diagnosis is, apparently, not yet as generally appreciated as it should be by the profession at large. In those cases where the diagnosis of diphtheria is obvious from clinical evidence alone, antitoxin should be administered at once without waiting for a bacteriologic examination. In doubtful cases, where the physician, though not positive, is inclined to regard the case as diphtheria, the same course should be adopted, especially if the case seem urgent. In that class of still more doubtful cases, where the ablest clinician is unable to arrive at even an approximate diagnosis. bacteriologic investigation is imperative, and should not be neglected if it can possibly be secured.

In all the above instances, however, even where antitoxin has been administered at once, the clinical diagnosis should be confirmed bacteriologically wherever practicable

Prom a critical review of the reports received the fact has impressed itself upon the committee that a certain degree of timidity still exists with many physicians in the employment of the remedy. The dose given in many instances is still too small, and the necessity of as early administration as possible seems to be not yet fully appreciated. With increased experience, and a more thorough understanding of the indications for its employment in the proper dosage, there is reason to hope that its usefulness will be still further extended.

Tuberculosis.

Your committee regrets that the information

TABLE No. 1.—SHOWING A TABULATED STATEMENT OF THE REPORTED FACTS IN ONE HUNDRED CASES OF DIPHTHERIA OCCURRING IN THE PRIVATE PRACTICE OF VIRGINIA PHYSICIANS.

Number	Sex	Age.	Location of membrane.	Severity.	Was bacteriologic examination made?	Was it positive or negative?	Day of injection.	Whose preparation was used?	Dose. Units.	Dose. C. C.	Time of improvement.	Effect on temperature.	Effect on pulse.	Effect on general condition.	Was injection repeated?	How soon after initial dose?	Dose. Units.	Dose. C. C.	Effect on temperature.	Effect on pulse.	Effect on general condition.	Operation.	Disappearance of membrane (day).	Complications (usual).	Effect of serum on same.	Outcome of case.	Were there any rashes?	Character of rashes.	Joint affections.
1	F.	20 yrs.	t. and p.	Severe.	No.	Not stated.	2	P., D. & Co.	750	?	6 hours.	Fell 3°.	Reduced.	Not stated.	No.								4	No.		R	No.		No.
2	"	6 "	t. p. o. buccal, vaginal.	"	Yes.	Positive.	7 to 8	Behring's.	800	8	24 "	Increased at first; then fell.	Increased; then slowed.	Improved.	Yes.	3 days.	800		Increased.	Increased.	Bad.		13	Acute Nephritis.	?	R	Yes.	Gen. macular.	Yes.
3	"	3 "	t. p. and l.	Malignant.	No.	Not stated.	1	"	?	2½	12 "	Reduced.	Reduced.	"	"	12 hours.		2½	Reduced to normal.	Reduced.	Improved.		3	No.		R	No.		No.
4	"	11 mos.	t. p. o. and l.	Severe.	"	"	2	P., D. & Co.	1000	?	None in 24 hours.	No effect.	Not perceptible.	No effect in 24 hours.		24 "	1500	?	Reduced.	"	"		7	"		R	"		"
5	M	4 yrs. 2 mos.	l.	"	Yes.	Positive.	4	"	2000		16 hours.	Decreased.	Increased.	Improved.	No.							Not stated.	?	Albuminuria	?	R	"		"
6	F.	5 yrs.	t. and n.	"	No.	Not stated.	3	"	1000	5	16 "	"	"	"	"								4	No		R	Not stated.		Not stated
7	M	3 "	l.	Malignant.	"	"	5	Behring.		?	12 "	"	Improvement	?	"							Not stated.	11	"		R	"		"
8	F.	6 "	t. and p.	Mild.	"	"	2	P., D. & Co.	1000	?	?	Increased.	Increased.	Improved.	Yes.	8 hours.	1500	?	Increased.	Increased.	Improved.		?	Not stated.		R	"		"
9	"	2 "	l.	Severe.	"	"	4	"	1000	?	2 hours.	"	"	"	No.							Not stated.	7	No.		R	"		"
10	"	1 "	t. and p.	Mild.	"	"	3	"	1000		21 "	Reduced.	Reduced.	"	"								5	"		R	"		"
11	M.	7 "	t. and p.	"	"	"	4	Pasteur Inst	?	10	18 "	Not stated.	Not stated.	Not stated.	Not stated.								5	"		R	Yes.	Gen. urticaria	No.
12	F.	14 "	t.	Severe.	"	"	3	Behring.	1500	6	12 "	Improved.	Improved.	Improved.	No.								5	Not stated.		R	No.		"
13	M	1 "	l. and t.	Malignant.	Yes	Positive.	6	"	2000	8	Few "	Not stated.	Not stated.	"	Yes.	6 hours.	1000	4	Not stated.	Not stated.	Not stated.	No.	9	No.		R	Not stated.		"
14	"	22 mos.	l. and t.	Severe.	"	"	3	"	2100	8.4	18 "	"	"	"	"	18 "	1000	?	"	"	"	"	7	"		R	"		Not stated.
15	I	5 yrs.	l. and t.	"	"	"	5	Mulford & Behring.	1500	6	12-14 "	"	"	"	No.							"	8	"		R	"		"
16	"	4 yrs. 6 mos.	l. and t.	"	"	"	1	Behring.	1800	7.2	8-10 "	"	"	"	Yes.	18 hours.	1000	4	Not stated.	Not stated.	Not stated.	"	9	"		R	"		"
17	M.	5 yrs.	t.	Mild.	"	"	2	Mulford's.	1000	4	21 "	Reduced to normal.	Reduced to normal.	"	No.								4	"		R	"		"
18	"	3 "	l.	Severe.	No.	Not stated.	3	P., D. & Co.	1000	?	6 "	Reduced.	Improved.	"	"							No.	5	"		R	"		"
19	F.	30 "	p. and n.	"	"	"	3	"	1000	?	?	"	Reduced	"	Yes.	21 hours.	1000	?	Reduced.	Increased.	Improved.		10	Bronchopneumonia; nephritis; paralysis.	All improved after second injection.	R	"		"
20	"	2 yrs. 6 mos.	general.	Malignant.	"	"	4	"		?	4 hours.	"	"	"	"	8 "		?	"	Reduced.	"	Not stated.	7	?	?	R	Yes.	Urticaria.	"
21	"	5 " 6 "	l.	Severe.	Yes.	Negative.	3	"	500	?	2-3 "	Not stated.	Not stated.	"	"	21 "	1000		Not stated.	Not stated.	"	No.	7	Bronchitis.	?	R	"		No.
22	M.	1 mos.	t. l. p. and n.	Malignant	No.	Not stated.	2	?		?	Not stated.	"	"	Not stated.	Not stated.								Not stated.	Not stated.		R	Not stated.		Yes.
23	"	12 yrs.	l. and p.	"	"	"	3	?		?	6 to 8 hours.	"	"	Improved.	Yes.	8 hours.		?	?	?	Improved.		?	Paralysis.	?	R	"		Not stated.
24	F.	16 "	t.	"	Yes	Positive.	5	Behring's.		?	12 "	Reduced.	Reduced.	"	"	12 "		?	Reduced to normal.	Reduced to normal.	"	Not stated	10	Not stated.		R	"		"
25	M	1 "	l.	"	No.	Not stated.	?	?		?	?	Not stated.	Not stated.	Not stated.	Not stated.							"	21	"		R	"		"
26	"	7 "	p.	Severe.	"	"	4	Mulford's.		10	12 hours.	Reduced.	Reduced.	Improved.	No.								7	"		R	"		"
27	"	10 yrs. 3 mos.	t. and p.	Malignant.	"	"	4	P., D. & Co.		?	10 "	"	"	"	"							Not stated.	10	Feeble heart action.		R	"		"
28	Not stated	22 mos.	l. t. and p.	Severe.	"	"	2	"	500		12 "	"	"	Alarming.	Yes.	12 hours.	1500		Improved.	Improved.	Improved.	No.	7	Not stated.		R	"		"
29	M.	8 yrs.	t. p. and n.	"	"	"	2	"	1500	6	12 "	"	"	Improved.	No.								5	"		R	"		"
30	"	7 "	l.	Malignant.	"	"	2	"	1000		Not stated.	Not stated.	Not stated.	Not stated.	Yes; thrice.	7, 12 and 12 hrs.	1000 each.		Reduced.	Reduced.	Improved.	No.	8	Albuminuria	Not stated.	R	"		"
31	F.	18 "	t.	Mild.	"	"	2	"	1500		12 hours.	Reduced.	Reduced.	Good.	No.								5	Not stated.		R	Yes	Urticaria.	"
32	"	30 "	l.	Severe.	"	"	7	"	1500		30 "	None.	None.	Not stated.	Yes.	22 hours.	1500		Reduced.	Reduced.	Improved.	No.	12	Albuminuria and bronchopneumonia.	Not stated.	D	"	?	"
33	M.	18 mos.	t.	"	"	"	4	Behr., No. 2.	600		Not stated.	Not stated.	Not stated.	"	No.								8	Not stated.		R	Not stated.		"
34	"	2 yrs. 6 mos.	t.	Mild.	"	"	3	"	750		6 "	"	"	"	"								6	"		R	"		"
35	"	2 yrs.	t.	"	"	"	2	"	700		10 hours.	Reduced.	"	Improved.	"								3	"		R	"		"
36	"	6 "	t.	Severe.	"	"	5	"	1000		Not stated.	Not stated.	"	"	"								8	"		R	"		"
37	"	1 "	l.	Mild.	"	"	2	U. S. M. H. S.		4	21 hours.	Reduced	Reduced.	"	Yes.	36 hours.		4	Improved.	Improved.	Improved.	No.	Not stated.	"		R	"		"
38	F.	11 "	t. and p.	Severe.	Yes.	Positive.	3	"		10	8 "	"	"	"	Yes; twice.	12 and 36 hrs.	10 c. c. each.		Reduced.	Reduced.	"		6 ?	Albuminuria	Unaffected.	R	"		"
39	M	26 "	t. and p.	"	"	"	2	"		10	Not stated.	"	"	"	No.								5	No.		R	Yes.	Urticaria.	"
40	F.	" "	t.	Mild.	"	"	12	"		5	"	"	"	"	Yes.	21 hours.		5	Reduced.	Reduced.	Improved.		15	"		R	No.		"
41	"	3 yrs. 6 mos.	t.	"	"	"	3	Behring's.		4	"	"	"	"	No.								4	"		R	"		No.
42	M	1 yr. 6 "	l. and p.	Malignant.	"	"	3	"		5	8 hours.	"	Improved.	Not improved	Yes.	24 hours.		5	Not affected.	Not affected.	Not stated.	Tracheotomy.		Diphtheroup.	Influenced.	D	"		Not stated.
43	F.	30 yrs.	t. and p.	Severe.	"	"	4	"		5	7 "	"	Reduced.	Improved.	No.								8	Paralysis.	Not stated.	R	"		No.
44	"	20 "	l.	"	"	"	3	"		5	10 "	"	"	"	"								7	No.		R	Yes.	Urticaria	"
45	"	2 yrs. 3 mos.	t. and p.	Malignant.	"	"	10	U. S. M. H. S.		5	Not stated.	Not stated.	Not stated.	Not stated.	Yes.	24 hours.		5	Not affected.	Not affected.	Not affected.			Albumen.	Not stated.	D	No.		"
46	"	7 yrs.	t.	Severe.	"	"	2	"		5	8 hours.	Reduced.	Reduced.	Improved.	No.								6	No.		R	Yes.	Urticaria	"
47	M.	1 yr. 8 mos.	t. and p	"	No.	Not stated.	3	Mulford's.	1000	4	7 "	"	"	"	"								7	Albumen.	Influenced.	R	No.		"
48	"	2 " 8 "	t.	Mild.	"	"	1	Behring's.	1000	5	6 "	"	"	"	"								3	No.		R	Not stated.		Not stated.
49	"	4 yrs.	l.	Malignant.	"	"	6	Not stated.	Not stated.		21 "	"	"	Good.	Yes.	24 hours.	Not stated.		Not stated.	Not stated.	Not stated.	Tracheotomy.	Not stated.	Not stated.		R	"		"
50	"	10 mos.	l. and n.	Severe.	"	"	3	Behring's.	500		24 "	"	Not stated.	Improved.	"	48 "	500		"	"	"	Not stated.		"		D	Yes.	Urticaria.	No.
51	Not stated	Not stated.	Not stated.	Not stated.	Not stated.	"	Not stated.	Not stated.	Not stated.		Not stated.	Not stated.	"	Not stated.	Not stated.								Not stated.	"		R	Not stated.		Not stated.
52	"	"	"	"	"	"	"	"	"		"	"	"	"	"									"		R	"		"
53	"	"	"	"	"	"	"	"	"		"	"	"	"	"									"		R	"		"
54	"	"	"	"	"	"	"	"	"		"	"	"	"	"									"		R	"		"
55	"	"	"	"	"	"	"	"	"		"	"	"	"	"									"		R	"		"
56	"	"	"	"	"	"	"	"	"		"	"	"	"	"									"		R	"		"
57	"	6 yrs.	p.	"	"	"	"	Behring's.			"	"	"	"	Yes.	Not stated.	Not stated.		Not stated.	Not stated.	Not stated.			"		R	"		"
58	"	2 "	p.	"	"	"	"	"			"	"	"	"	"									"		R	"		"
59	"	6 "	p.	"	"	"	"	"			"	"	"	"	"									"		R	"		"
60	"	3 "	n.	"	"	"	"	"			"	"	"	"	"									"		R	"		"
61	"	1 "	p.	"	"	"	"	"			"	"	"	"	"									"		R	"		"
62	"	5 "	p.	"	"	"	"	"			"	"	"	"	"									"		R	"		"
63	"	4 "	p.	"	"	"	"	"			"	"	"	"	"									"		R	"		"
64	"	Not stated	Not stated.	Malignant.	"	"	"	Not stated.			"	"	"	"	Not stated.									"		R	"		"
65	"	"	"	"	"	"	"	"			"	"	"	"	"									"		R	"		"
66	"	"	"	"	"	"	"	"			"	"	"	"	"									"		R	"		"
67	"	"	"	"	"	"	"	"			"	"	"	"	"									"		R	"		"
68	"	"	"	Mild.	Yes.	Positive	"	"	1500		"	"	"	"	"									"		R	"		"
69	"	"	"	"	Not stated.	Not stated.	"	"	1500		"	"	"	"	"									"		R	"		"
70	"	"	"	Severe.	"	"	"	"	1500		"	"	"	"	"									"		R	"		"
71	"	"	"	"	"	"	"	"	1500		"	"	"	"	"									"		R	"		"
72	"	"	"	"	"	"	"	"	1500		"	"	"	"	"									"		R	"		"
73	"	"	"	Malignant.	"	"	"	"	1500		"	"	"	"	"									"		R	"		"
74	"	"	"	Not stated.	"	"	"	P., D. & Co.	Not stated.		"	"	"	"	Yes.	20-24 hours.	Not stated.		Reduced.	Reduced.	Improved.	Tracheotomy.		"		R	"		"
75	"	"	"	"	"	"	"	"	"		"	"	"	"	"				"	"	"	"		"		R	"		"
76	"	"	"	"	"	"	"	"	"		"	"	"	"	"				"	"	"	"		"		D	"		"
77	"	"	"	"	"	"	"	"	"		"	"	"	"	"				"	"	"	"		"		D	"		"
78	"	"	l.	Mild.	"	"	"	Not stated.	"		24 hours.	"	"	"	"	36 hours.	Not stated.					Not stated	Not stated.	"		R	"		"
79	"	"	Not stated.	"	Yes.	Positive.	"	"	"		24 "	"	"	"	Not stated.									"		R	"		"
80	"	"	"	"	"	"	"	"	"		Not stated.	"	"	"	"									"		R	"		"
81	"	"	"	"	"	"	"	"	"		"	"	"	"	"									"		R	"		"
82 91*	"	"	"	Not stated.	Not stated.	Not stated.	"	"	"		"	"	"	"	"									"		R	"		"
92	F.	1 yr. 8 mos.	t. and p.	Mild.	Yes.	Positive.	10	Behring's.		2	12 hours.	Reduced.	Improved.	Improved.	"								13	"		R	"		"
93	"	5 yrs	l.	Malignant.	No.	"	2	P., D. & Co.	500		2 "	"	"	"	Yes.	16 hours.	1000		Reduced.	Improved.	Improved.	No.	5	Pneumonia	Not stated.	R	"		"
94	M.	20 "	l. and p.	Severe.	"	"	3	"	1000		6 "	"	"	"	"	40 "	1000		"	"	"		5	Not stated.		R	"		"
95	"	26 "	l. and p.	"	"	"	3	"	1000		2 "	"	"	"	"	18 "	1000		"	"	"		5	No.		R	"		"
96	F.	9 "	l.	Malignant.	"	"	1	"	250		3 "	No effect.	Reduced.	"	"	16 "	1000		"	"	"	No.	5	"		R	"		"
97	"	28 "	t. and p.	Severe.	"	"	2	"	1500		12 "	Improved.	Improved.	"	No.								5	"		R	No.		No.
98	M.	3 "	t. p. and n.	"	"	"	Not stated.	"	1000		12 "	"	"	"	"								3	"		R	"		"
99	F.	3 "	t. p. and l.	Mild.	"	"	"	"	1000		12 "	"	"	"	Yes.	24 hours.	500		Not stated.	Not stated.	Not stated.	No.	3	"		R	"		"
100	"	31 "	p. n. and l.	Severe.	Yes.	"	5	"	1500	6	24 "	"	"	"	No.								10	"		R	"		"

* Ten cases. t.—tonsilitis. p.—pharyngeal. n.—nasal. l.—laryngeal. P. D. & Co.—Parke, Davis & Co. U. S. M. H. S.—U. S. Marine Hospital Service.

furnished upon the serum treatment of this disease in our State is so meagre and incomplete that accurate deductions on the subject cannot be made. Of the 48 cases reported, five were cured, 13 improved, 13 unimproved, 15 died, and two not stated.

Concerning the five cases reported as recovered, no information was given as to stage of disease when treatment was begun; the diagnosis of cure was made upon the improvement in physical signs and the disappearance of tubercle bacilli from the sputum; two of these cases are stated to be in robust health and free from all signs of tuberculous taint.

Of the 13 cases improved, one was in the first stage of the disease, and under the treatment all symptoms improved, but the bacilli, although diminished in number, still persisted. Concerning the other 12 cases, no data were given.

Of the 13 unimproved cases—in one, a case in the second stage of the disease, treatment had to be discontinued on account of unfavorable action of the serum. Concerning the other 12 unimproved cases, no data were given.

Of the 15 cases terminating in death, one was in the first stage when treatment was begun; three in the second stage; five in the third stage; and six not stated.

In the majority of cases in which information upon the subject was furnished, untoward symptoms followed the injections and were apparently due to the serum.

In six cases, rashes of an urticarial, macular, or erythematous character were noted; in three cases, there were joint symptoms, and in three, alarming attacks of general numbness, apnœa, syncope, or collapse, followed the injections.

From the information furnished in the reports received, it appears that serum-therapy does not, at the present time, offer any advantage over other methods of treatment in tuberculosis. Only one physician states that "serum-therapy is a great help to creosote, strychnia, etc., in the treatment of tuberculosis."

Tetanus.

Reports of only two cases of the employment of serum in tetanus were received—one mild, the other severe—both terminating fatally.

Puerperal Sepsis.

The only instance reported of the employment of antistreptococcic serum was in a case of puerperal sepsis, following delivery by a colored midwife. The disease developed six days after delivery, and when treatment was begun, three days later, patient had a temperature of 103° Fahr., pulse 148. Improvement began sixteen hours after injection, and was manifested by a fall in temperature of three degrees. In addition to the serum, the usual local treatment of curettage, douches, etc., was employed.

Conclusions.

Antitoxin is the most valuable remedy yet devised in the treatment of diphtheria.

Its use is especially valuable in laryngeal cases.

It should be employed at the earliest possible moment after a diagnosis is made.

The initial dose should be (according to the type and severity of the case) from 1,000 to 3,000 units of a concentrated serum, and should be repeated according to indications.

Local and other general treatment should not be neglected because antitoxin is used.

As a prophylactic agent, its value is unquestioned.

From the information furnished in the reports received, it appears that serum does not, at the present time, offer any advantage over other methods of treatment in tuberculosis.

The number of reported cases in tetanus and puerperal sepsis are too few to justify any conclusions.

The Committee thanks the following physicians for reports of cases:

Atkinson, B. M., Staunton, Va.
Blanton, C. A., Richmond, Va.
Brower, C. F., Catharpin, Va.
Dupuy, H. R., Norfolk, Va.
Edwards, Landon B., Richmond, Va.
Ellis, D. S., Ashland, Va.
Feild, E. E., Norfolk, Va.
Flannagan, L. E., Charlottesville, Va.
Frost, Henry, Marshall, Va.
Gibson, Wm. Alexandria, Va.
Gleaves, C. W., Wytheville, Va.
Hartman, W. F., Swoope, Va.
Henkel, A. M., Staunton, Va.
Henkel, H. H., Staunton, Va.
Henson, J. W., Richmond, Va.
Hoge, M. D. Jr., Richmond, Va.
Hutchison, Frederick, Areola, Va.
Ingram, Lawrence, Manchester, Va.
Jones, T. M., Alexandria, Va.
Jordan, Arthur, Richmond, Va.
Keen, T. F., Hamilton, Va.
Kelly, J. W., Big Stone Gap, Va.
Lankford, L., Norfolk, Va.
Levy, E. C., Richmond, Va.
Levy, H. H., Richmond, Va.
Martin, Rawley W., Lynchburg, Va.
McGuire, Hugh, Alexandria, Va.
McGuire, Stuart, Richmond, Va.
McMurran, R. L., Portsmouth, Va.
Nelson, A. J., Gaines Mill, Va.

Nelson, Hugh T., Charlottesville, Va.
Nichols, R. Angus, Richmond, Va.
O'Brien, M. W, Alexandria, Va.
Parkins, T. M., Mt. Sidney, Va.
Patterson, J. K., Lynchburg, Va.
Ross, George, Richmond, Va.
Shepherd, L. C., Norfolk, Va.
Slaughter, R. M., Theological Seminary, Va.
Taylor, Hugh M., Richmond, Va.
Tompkins, Chris., Richmond, Va.
Tompkins, J. E., Fredericksburg, Va.
Turner, W. D., Fergusson's Wharf, Va.
Vanderslice, G. K., Phœbus, Va.
? ? ? (FIVE failed to sign their names).

The Committee thanks the follow for helpful information:

Baird, J. W., Carsley, Va.
Barham, S. B., Spottsville, Va.
Bramblett, W. H., Pulaski, Va.
Corrie, Geo., Blossom Hill, Va.
Crawford, Joel, Yale, Va.
Ewell, Jesse, Ruckersville, Va.
Harker, F. S., Richmond, Va.
Harrison, Edmund, Richmond, Va.
Henley, Leonard, Williamsburg, Va
Kerr, A. F., Millboro, Va.
Peek, Jesse H., Hampton, Va.
Scott, John W., Gordonsville, Va.
Simmons, John W., Floyd, Va.
Stoakley, Wm. S., Millboro Springs, Va.
Taylor, T. J., Walthall's Store, Va.
Wallace, J. W., Covington, Va.

The following physicians report that they have not used serum-therapy:

Cannaday, A. A., Roanoke, Va
Copeland, J. E., Round Hill, Va.
Doyle, C. W., Glendoyle, Va.
Gillespie, R. B., Tazewell, Va.
Gordon, H. W., Madison, Va.
Holladay, Lewis H., Orange, Va.
Holloway, R. G., Rappahannock Acad., Va.
Massey, C. R., Post Oak, Va.
Melvin, H. B., Houston, Va.
Morton, C. S., Pamplin City, Va.
Nuckolls, C. B., Hillsville, Va.
Powell, E. C., San Marino, Va.
Seward, R. Lee, Isle of Wight, Va.
Wood, A. D., Martinsville, Va.
? ? ? (one failed to sign his name.)

Respectfully submitted.

[POSTSCRIPT.—Since the tabulation of the *Report on Diphtheria*, an able practitioner sends in reports of *two cases* which may be added and percentages made on 102 cases *of diphtheria* instead of 100 as in the Tabulated Report].

	CASE I.	CLASS II.
Sex	Male.	Female.
Race	White.	White.
Age	Three years.	Four years.
Type	Laryngeal.	Tonsillar and nasal.
Clinical type	Malignant.	Malignant.
Bacteriological investigation	No.	No.
Serum injected	Third day.	First day.
Preparation used	P. D. & Co.	P. D. & Co.
Initial dose	1000 units.	500 units (1 bulb).
Improvement manifest	In six hours.	None after first dose.
Temperature	Reduced.	No effect.
Pulse	Less frequent.	" "
Respiration	Less frequent and less laborious.	" "
General condition	Improved.	" "
Injection repeated.	No.	Yes.
Indication for repetition	...	Lack of improvement.
Interval after initial dose	...	14 hours.
Dosage	...	1000 units repeated in 24 and 48 hours.
Effect on temperature	...	Reduced.
Effect on pulse	...	None.
Effect on respiration	...	Slower.
Effect on general condition	...	Gradual return to normal.
Other treatment employed	Calomel 1-12 grain. Pulv. ipecac ½ gr. M. S. Repeat one every hour—six doses.	1-30 gr. mercury bichlorid. with 1-40 gr. strychnine.
Intubation or tracheotomy	No.	No.
Membrane entirely disappeared.	On 6th day.	On 5th day.
Complications of disease	None.	Yes. Paralysis of voice complete. Very much shortened by serum.
Final outcome of case	Recovery.	Recovery.
Used antitoxin as prophylactic?	No.	No.
Rashes noted after antitoxin	None.	None.
Joint symptoms after antitoxin	None.	None. [This child was taken with diphtheria just as improvement from meningitis [cerebral or cerebro-spinal?] took place.—*Editor.*]

ECTOPIC PREGNANCY TWICE IN SAME PATIENT—TWO CASES.*

By C. B. SCHOOLFIELD, M. D., Dayton, Ky.

The subject of ectopic pregnancy has been so freqnently and fully discussed by the members of this Society that I feel that an apology is due them for again presenting it this evening. The infrequency, however, of a second occurrence in the same patient may justify me in reporting the two following cases, with a few appended remarks.

Case I.—Mrs. C. C., age 27, was operated on February 8th, 1890, by Dr. Thad. A. Reamy; her case was reported to the Academy of Medicine and published in *Lancet-Clinic* December 26th, 1890. Her health, after operation, remained good and menstruation regular up to and including November 15th, 1893.

She missed her regnlar period in December, 1893, which was followed by signs of pregnancy, such as morning sickness, enlargement of breast, etc. January 1st, 1894, she had a slight and irregular flow, with colicky pains, lasting one week. February 25th she had more severe pains with syncope, followed by slight hemorrhage. March 8th she took a short ride in a carriage which again brought on the "flow." She remained in bed after this until April 29th, when she was allowed to sit up, but was compelled to lie down on account of faintness. May 7th, Dr. Arthur Johnstone was called in consultation. The abdominal walls were so thick and the uterus drawn up so high that its size and shape could not be made out; but to the right could be felt a small tumor the size of a small orange.

Taking all the symptoms, so similar to her former tubal pregnancy, together with the lump to the right of the uterus, it was Dr. Johnstone's opinion (in which I fully concurred) that it was *tubal pregnancy, ruptured into the broad ligament.* The patient made a perfect recovery, and is enjoying perfect health at this time.

Case II.—Lucy B——, age 29, was operated on by myself January 29th, 1892, for *abdominal pregnancy* three months after full term and death of child. Her case was reported to the Academy of Medicine, Cincinnati, Ohio, and published December 3rd, 1892, in Vol. XXIX *Lancet Clinic.* She made a good recovery, and remained in good health.

Menses regular until February, 1896. Her husband came to see me in April, 1896; said his wife was pregnant, and suffering so much from vomiting and pain that she wanted me to come and see her. As I had attended her in her former trouble through charity, and as she was in the hands of a competent physician, I refused to go, not knowing, of course, that it was other than normal pregnancy. In a few days she sent one of her neighbors, who said she was in a very bad condition and begged for me to see her. I agreed to do so with her physician.

She had a high fever, distended abdomen, was extremely sensitive, especially over the left iliac and right hypochondriac regions, and was profoundly icteric. A tumor could be seen and felt in the left iliac region, and, on digital examination, a large fluctuating mass could be felt pushing the uterus to the right. She gave a history of irregular menstruation, vomiting with colicky pains, of shock with syncope and the passage of a pseudo-deciduary membrane. She had general peritonitis. Diagnosis, *ectopic pregnancy with supuration in the sack.*

Dr. C. L Bonifield was called the next day, May 10th, in consultation, and concurred in the diagnosis, and we both ventured the opinion that her case was complicated with stone in the gall bladder

She was sent to the Good Samaritan Hospital May 11th. Dr. Bonifield operated on the 12th. An incision was made immediately behind the uterus; a large quantity of organized blood clot, with the fœtus of about three months' gestation, and a part of the placenta were turned out, the cavity flushed with hot sterilized water and packed with iodoform gauze. The patient died in about three hours after.

An *autopsy* was held thirty-six hours after death. A calculus the size of a pigeon's egg, was found in the gall bladder. The left tube was ruptured and contained a portion of the placenta. The adhesions were so dense that it was impossible to get the uterus and appendages out in a condition for satisfactory examination, and no microscopic examination was made.

As stated in the beginning of this paper, but few cases have been reported in which *ectopic pregnancy has occurred twice in the same patient.* The list of second occurrences, as far as I am able to collect them, are as follows:

Lawson Tait, one, confirmed by autopsy; Hayden, one, confirmed by autopsy; Veit, Jr, one, confirmed by laparotomy, recovery; Olshausen, one, confirmed by laparotomy, recovery; Carl Beck, one, confirmed by laparotomy recovery; K. Abel, one, confirmed by laparot-

* Read before the Obstetrical Society of Cincinnati.

omy, recovery; J. M. Duff, one, confirmed by laparotomy, recovery; J. F. W. Ross, one, confirmed by laparotomy, recovery; H. C. Coe, one, confirmed by laparotomy, recovery; E. Herman, one, confirmed by laparotomy, recovery.

Other cases are reported by Veit, Jr., Kletsch, Olshausen, Seigenbeck, Van Heukelom, Frommel, Leopold Meyer, Meckenrodt and Winckel, but not verified by abdominal section or autopsy. Coe's and Hayden's cases were the most remarkable, being examples of second occurrence in the same tube.

Notwithstanding the exhaustive study that has been given this subject, the *etiology* is in some respects obscure. Until the point at which fertilization of the ovum takes place is fully established, our knowledge of its physiology and pathology must be imperfect. Normally, we have three factors that carry the ovum to the uterus—the peristalsis of the tube, the cilia, and the wave or current that exists between the peritoneal cavity and the uterus. Interference with any one or all of these may be the *cause of tubal pregnancy.* Twists of the Fallopian tube, due to arrested development, inflammatory conditions that paralyze, bind down or occlude the tube, or destroy the cilia, uterine or ovarian neoplasms and diverticula of the tube are the principal etiological factors.

There are but two points in regard to the *treatment* to which I wish to draw your attention and elicit discussion. One refers to the *choice of methods* of operating; the other *our duty* in regard to the remaining appendage.

The route usually selected is the abdominal, and in a majority of cases it is probably the best; but there are many, among these second occurrences especially, in which the vaginal route is to be preferred. In such cases as the one just related where the first was an abdominal pregnancy, and the sack left the adhesions are so extensive as to make cœliotomy extremely difficult, if not impossible; besides, these adhesions act as a barrier against excessive hemorrhage and limit the loss of blood, and for this reason should not be disturbed. In the earlier stages of pregnancy, where the tube has ruptured and active hemorrhage has ceased, or if there are indications of suppuration the vaginal route offers the best means for removing the contents of the gestation sack and drainage.

The patient should, of course, be prepared for laparotomy in case active hemorrhage should occur during the vaginal operation. The duty of the operator with reference to the remaining tube is a grave one. If no children have been born, and there is an earnest desire for offspring, it would be an additional calamity to deprive them of this hope. If there are no microscopic evidences of disease our scruples might be easily allayed; but should there be deformity of the tube, or the slightest evidence of disease, the responsibility of leaving it should rest with the parties themselves, after the danger of so doing is fully explained to them. After hearing the report of Dr. Hall's case at our last meeting, it appears that occular evidence is not sufficient to prove that it is safe to leave even an apparently healthy tube behind, and in the future the writer would feel it his duty to place the patient beyond such a possibility, or as stated above, let the responsibility rest with those most liable to suffer.

631 *Sixth Avenue.*

NORMAL AND ECTOPIC GESTATION (TUBAL) COINCIDENT.

By H. E. JONES, M. D., Roanoke, Va.

In reporting the following, I am led to do so, believing it would be of interest to my fellow-practitioners for two reasons:

1st. Ectopic gestation is relatively of rare occurrence.

2d. In the case before us, we have a normal complicated by a tubal pregnancy, dating, as I believe, from the same fœcundation.

Case.—Mrs. T., age 42, multipara. I was called to see her October 26, 1897 I found her pregnant and threatened with an abortion. The usual remedies were employed to correct the disorder and carry the case to term.

On November 23, 1897, after all modes of procedure had failed, I recognized that surgical intervention was necessary for the relief of her trouble. With the assistance of Dr. R. W. Brown, we anæsthetized and relieved the uterus of its contents. Evidently the fœtus had been discharged with hemorrhage and clots, as we found nothing but a well formed placenta of two and one-half or three months' development. After using a dull curette and douching with a 1–4000 bichloride solution, we packed the uterus with 10 per cent. iodoform gauze, which was removed in twenty-four hours. The operation was a success, there being no fever nor subsequent hemorrhage, but a sero sanguinolent discharge that was checked about the twelfth day. During this time she steadily improved, and I discontinued my visits after putting her upon a liberal diet with

fruits, and a medicinal line of manganese, iron and strychnia.

In six or eight days I called to see her, and found her on the decline, suffering apparently with acute indigestion. I immediately changed the treatment and placed her on unfermented grape juice, peptonized milk with eggs and toast, strychnia, stomachic and intestinal tonics. In spite of this the decline continued; so I concluded to make again a thorough examination of the pelvic viscera. I found a tumor in the region of the left tube and ovary. I was undecided as to its nature. The temperature had never reached above 99.5°. I excluded pyo-salphynx, and also hæmatocele, as there had been no evidence of internal hemorrhage, and on account of the recent abortion I did not consider extra-uterine pregnancy probable, as the fœcundation in the human being of two ova is a rare occurrence; I had never seen a case reported where it had taken place in the uterus and tube at the same time. Hence I regarded it as one of the various solid or liquid tumors that may develop in that region, which could only be cleared up by abdominal section.

Under this state of affairs I decided to call in consultation Dr. C. G. Cannaday. He concurred with me in my opinion of the case, and an exploratory laparotomy was decided upon, despite the fact that the patient was in poor condition to undergo a major operation, a further delay being out of the question. She was removed to Rebekah Sanitarium, and the best preparation possible was made for the operation.

On January 12th there was evidence of internal hemorrhage. Assisted by Drs. C. G. Cannaday, R. W. Brown, and J. C. Bodow, I entered the abdominal cavity through the linea alba. As soon as the peritoneum was incised there was a flow of bright red liquid and clotted blood, which was rapidly turned out, the cavity sponged and hemorrhage checked by pressure.

A rapid examination of the tumor was made and proved to be tubal pregnancy, situated midway between the uterus and ovary. Its contents were removed and a rupture of the sac was found at its most dependent portion. The fœtus, judging from its size and condition, was of about four months' gestation. The patient reacted from the chloroform, but the shock grew more profound as the anæsthetic wore off. We used nitroglycerin, strychnia, atropine, and whiskey hypodermically, as they were severally indicated; also hot applications were applied to body and extremities, and normal saline solution transfused. Death ensued in four hours.

In our opinion, the cause of death was hemorrhage, due to rupture of the sac an hour or more prior to operation, which so intensified her already weakened and anæmic condition, that she did not have recuperative power necessary to tide over the immediate effects of the operation.

Had a clearer differential diagnosis been made earlier, less heroic measures or an earlier operation might have saved the patient. It is beyond question very difficult to diagnose ectopic gestation under any circumstances. A perusal of the leading and latest works on gynæcology will convince one that a positive differential diagnosis from other tumors of that region is almost impossible.

I do not think it will go amiss to quote the following from Thomas and Mundé on *Diseases of Women:* "The question of diagnosis being a very momentous one, it is generally advisable to settle it by crucial tests, which are not attended by great danger if the case be not one of pregnancy, and might prove curative if it were so. Very often we hear of physicians being blamed on account of failure of diagnosis in those cases which certainly die from rupture. Every medical man who countenances such a charge demonstrates his want of experience or his want of professional loyalty by so doing. Very often there is nothing in these terrible cases to excite suspicion; very generally nothing to decide us positively when suspicion is excited."

The same author as to prognosis says: "Whatever be the variety, the period or the circumstances connected with this vice of gestation the prognosis is bad."

In the *American Gynæcological and Obstetrical Journal*, I find the following in regard to *tubal pregnancy:* "W. R. Nichols, of Baden, Ont., says that it was formerly supposed that tubal pregnancy was of rare occurrence, but in a series of three thousand five hundred general autopsies made by Dr. Formad, pathologist, no less than thirty five cases of ectopic gestation were found. As a practical subject, it can never be devoid of interest, owing to the difficulty of diagnosis, the suddenness of the symptoms and the danger to life. Mr. Tait, in 1889, speaks with skepticism of the possibility of diagnosis before rupture. J. Bland Sutton, in his works, says that he only knew of one case of diagnosis before rupture."

Dr. George T. Harrison, in a discussion on ectopic pregnancy in the above named journal, says: "I would like to make remarks about two points: One is the criterion to help us to determine when to operate and when not to

operate in a case of ruptured ectopic gestation. I think we can decide the matter very often in this way. You are called to see a patient in which the clinical history and vaginal examination lead you to believe that the woman has tubal pregnancy and that rupture has taken place. Now, if, in making the bimanual palpation, you find by the side of the uterus a distinct tumor, I should say that this would contraindicate an operation, because the bleeding had taken place within the adhesions, and there is the formation of a hematocele that we know will get well without an operation. But in cases in which there is no tumor and the hemorrhage is threatening, I think under all circumstances an operation is indicated."

The case reported in this paper I consider a most misleading one, in that we have both a normal and abnormal pregnancy with no symptoms pointing to the abnormal condition until a few days before the fatal termination, and about five weeks after the abortion of the normal gestation.

I consider a report of this case, as also the subject of abnormal pregnancy in general, of great importance to general practitioners; and to have the opinion of the above quoted eminent members of the profession in this article will greatly benefit those of limited experience in the field of gynæcology and obstetrics. If there are any two departments in medicine that general practitioners should be especially proficient in, it is in the above named, for it is often the case that two lives in one case are dependent upon our knowledge and skill for their wellfare and safety. And those who are not competent, scientific and skilled in these branches to the extent of recognizing and meeting the various recognizable abdominal and complicated conditions that may occur in the female during the child bearing period, ought to call in consultation, early in the case, some one of special experience and training in those branches; the failure to do so is serious, and the consequences are terrible to contemplate.

There are two lessons taught us by this case, and the literature on the subject:

First. Frequent and thorough examinations should be made of patients with diseased tubes and ovaries, those who are pregnant, and also those who have recently miscarried and do not continue to do well when there is absence of sepsis.

Second. All cases of tumors in the region of the tubes and ovaries in married women, during the child bearing period, should be operated upon early (when the condition of the patient will allow of operation), for fear of tubal pregnancy and rupture of sac or tube, as the mortality is less and the operation is more easily performed before than after rupture.

THE TREATMENT OF PNEUMONIA.*

By JACKSON PIPER, M. D., Towson, Md.,

President Baltimore County Medical Association; Ex-President Maryland State Board of Health, etc.

The question often arises amongst physicians, if the treatment of pneumonia, under the advanced knowledge of the causation of this disease, is any more successful than the methods pursued in former times.

The mortality of pneumonia, based on the eighth and ninth census reports, in the States of our Union, wholly or in part above the 39th parallel, is 61.43 in 1,000 deaths, and 0.69 per 1,000 inhabitants. In States wholly or in part below the 39th parallel, the mortality is 93.70 per 1,000 deaths, and 1.27 to every 1,000 inhabitants—this being an excess over the Northern States of 32.27 per 1,000 deaths, and 0.58 to every 1,000 inhabitants.

In the Northern belt, Maine has the lowest mortality—51.22 per 1,000 deaths; Nebraska the highest—87.30 per 1,000 deaths.

In the Southern belt, California is the lowest —46.77; Maryland comes fourth—59.59; Virginia, West Virginia inclusive, comes sixth—75.66 per 1,000 deaths, and Arkansas highest—183.42.

It seems to be the general impression that the disease is more fatal now than it was a number of years ago, but it is difficult to determine this accurately.

A study of this subject has been made by Drs Towsend and Coolidge, of the Massachusetts General Hospital, from 1822 to 1889.

They arrived at the following conclusions:

1st. In the 1,000 cases of acute lobar pneumonia in the Massachusetts General Hospital, from 1822 to 1889, there was a mortality of 25 per cent.

2d. The mortality has increased from 10 per cent. in the first decade to 28 per cent. in the present decade.

3d. This increase is deceptive for the following reasons—all of which were shown to be causative of the large mortality:

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* Read before the Baltimore County Medical Association, January 20th, 1898.

(a) The average age of the patients has been increasing from the first decade to the last decade.
(b) The relative number of complicated and delicate cases has increased.
(c) The relative number of intemperate cases has increased.
(d) The relative number of foreigners has increased.

4th. These causes are sufficient to explain the entire rise of mortality.

5th. Treatment, which was heroic before 1850, transitional between 1850 and 1860, and sustaining since 1860, has not, therefore, influenced the mortality rate.

6th. Treatment has not influenced the duration or its convalescence.

In view of the startling statistics and statements given above, permit me to briefly refer to the different methods of treatment in use from 1850 to the present time as topics for discussion by the members of this Association. By thus reviewing the field of medicine, and by an interchange of views of our personal methods of treatment, we can arrive at some proper conclusion as to the merits or demerits of practical medicine, and derive that benefit and instruction for which this Society was formed.

Dr. Wood (1855) says: "No disease bears the loss of blood so well as open, well developed pneumonia in persons with vigorous constitutions. This evacuation is called for, not only in reference to its direct influence in relieving inflammation, but also with a view of diminishing the labor of the lungs, and thus procuring rest for the diseased organ, as far as this is possible. * * * * * *

"In vigorous patients, in the earlier stages of the disease, with a strong pulse, and before hepatization has been fully developed, from 16 oz. to 30 oz. may be taken. There is some reason to hope, in this stage, that we may arrest the progress of the disease by decided measures.

"Evacuate the bowels, give small doses of tartar emetic, or if this disturbs the stomach, substitute the effervescing draughts. In two or three days, give opium, ipecac, and calomel.

"Increase the opium to procure rest and allay the cough

"If the pain continues, use leeches or cups; large emollient cataplasms; and if the hepatization continues, apply a large fly blister. Slight ptyalism if the case is obstinate. Give expectorants in the latter stage, and if debility ensues, carb. of ammonia, brandy, and a nourishing diet.

"*In typhoid pneumonia*, give carb. of ammonia, brandy, wine, whey, infusion of serpentaria. Tonic doses of milk and eggs."

Watson (1858) says: "To dictate the treatment of pneumonia is not an easy task. It may seem like a paradox, but concerning this disease, I believe it to be true, that the very perfection of modern diagnosis has helped to bring uncertainty and vascillation into our practice.

"The current is rolling (too strongly, I conceive) against antiphlogistic treatment. My own experience teaches me that such flagrant and sthenic forms of pneumonia have become very rare amongst us. Years have passed by since I have met with any instance, in my practice, of this disease which has required phlebotomy. I may say much the same of inflammatory diseases in general.

"Only use blood-letting in the first stage of asthenic pneumonia, and then most guardedly, but give tartarized antimony less the point of nauseating, and calomel less the point of mercurilization. After the inflamed lung has become solid and impermeable, the treatment must be regulated rather by the state of the system at large than by the actual or presumed condition of the lung. We must look for guidance more to the general symptoms than to the physical signs. Tonics, stimulants, and a good supporting diet are here indicated, and the application, not too soon, of large fly blisters."

Aitken (1868) says: "A rational treatment for pneumonia is one which must secure to each case its own individuality. And as the shades of differences and the corresponding modifications of treatment cannot be expressed *in groups*, statistics, thus far, become simply an impossibility. For example, bleeding, antimony, mercury, and blisters, may be demanded in one case; quinine, opium, and wine, in another; a third may require but little interference beyond a well regulated diet with moderate stimulants."

Dr. Popham, physician to the Cork North Infirmary in 1868, treated 28 cases of pneumonia by alkalies. They all recovered. In some, the signs of engorgement only existed at the time of admission; in others, hepatization was found. The reliable marks of pneumonia existed in all: that is; localized dullness, crepitation, tubular breathing, rusty sputa (in many), and labial herpes in half. Six were cases of double pneumonia. Bicarbonate of potash was given, largely diluted in mucilaginous liquids—5 to 30 grains each dose—4, 6, to 8 doses in the 24 hours An adult took to the extent of 2 to 3 drachms per day. First, the

character of the expectoration was altered on the second or third day of its use. The viscid sputa became resolved; the fine bubbles changed to coarse and large; the rusty sputum to white; its tenacity of adhesion lessened, and the cough, instead of continuing harsh and dry, became moist, soft, and expulsive.

Jürgensen (1875) says: "If we regard pneumonia as an acute infectious disease, the indications for treatment are very much simplified. Nature cures, and the only duty of the physician is to maintain life until the cure is effected.

"This is the principle which underlies the management of all acute infectious diseases, and is applicable here unconditionally. The danger in croupous pneumonia threatens, principally, the heart of the patient. Death results from insufficiency of the heart; and now for a proof of this statement.

"1st. The exudation in pneumonia produces an increased resistance in the pulmonary circulation, and consequently increased effort on the part of the right ventricle.

"2d. The changes produced in and near the lung by pneumonia diminish the total amount of force to be furnished by this organ for the movement of the blood.

"3d. The exudation diminishes æration, hence the cardiac and respiratory muscles must do an increased amount of work.

"4th. The fever first brings to expression the local disturbances produced by the pneumonia.

"The duty of the physician, therefore, is to enable the heart, during pneumonia, to perform the additional labor made necessary by the disease.

"1st. Prophylaxis against the exhaustion of the heart.

"2d. Control of already existing exhaustion.

"The *fever* is the *first point* of attack for treatment.

"Abstract the heat directly by cold bathing. If stimulants are given before and after the bath, there is no danger of paralysis of the heart.

"In regard to the amount of heat to be withdrawn, I again take as my guide the principle that the abstraction of heat is intended to guard against exhaustion of the heart, and that the chief danger of such exhaustion lies in the fever.

"Use the bath (from 60.08°F. to 41°F.) when the temperature in the rectum reaches 104°. Repeat the baths as often as the temperature rises.

"With young children, the wet sheet may be used. In old persons, whose temperature rarely reaches 104°, but varies between 101° to 103°, I use tepid baths (77° to 78°F.), administered for 20 to 30 minutes at a time, early in the morning (from 4 to 7 o'clock), which bath will reduce the temperature for a comparatively long period.

"This effect may be continued by giving quinine at the same time. As long as the low temperature lasts, the heart, so to speak, takes a rest.

"Of course the baths may be repeated at any other hour in the day.

"We will be severely blamed, possibly, if we lose our patient, but no conscientious physician will hesitate which course to pursue if he is satisfied of the truth of his opinions. I invariably use quinine in all cases; and if the heart is very weak at the commencement of the attack, I first use stimulants until its action is strengthened. Then feel my way cautiously by first using warm baths. I use large doses of quinine at long intervals. The reduction of temperature will not be so great by giving small doses at short intervals.

"There are some cases of pneumonia in which the whole treatment for a time must be directed to the production of sleep. In such cases, a full dose of quinine sometimes acts as a hypnotic. Sleeplessness is a frequent symptom in drunkards when taken with pneumonia. I am opposed to blood-letting. In heart exhaustion, I believe in the proper and bold use of stimulants, alcoholic and others."

Pepper (1894) says: "Pneumonia is a disease for which there is no routine treatment applicable to every case; on the contrary, much judgment is required to decide what is the best way of managing each patient."

As a rule, all the patients are to be kept in bed, and on a fluid diet, until the temperature has fallen to the normal, and the exudate has disappeared from the lung; but there are cases in which, even while the inflammation is active, a little scraped beef improves the heart-action; and in patients in whom deferescence or resolution is delayed for an unusually long time, it may be wise to give solid food, and to allow the patient to sit up before the usual time.

The headache, sleeplessness, and general discomfort, may require the use of opium, sulphonal, the bromides, and chloral.

For the excessive pain in the side, large poultices, repeated every two hours, and hypodermics of morphia, are to be used.

For the feeble heart, we employ alcoholic stimulants, digitalis, caffein, or strophanthus.

When there is excessive congestion of the lungs, and great dyspnœa and many coarse and subcrepitant râles over the lungs, relief can be obtained by repeated dry-cupping, by hypodermic injections of one-fiftieth of a grain of nitro-glycerin, or by 20-drop doses of nux vomica.

If general catarrhal bronchitis coexists, use dry-cupping or one-tenth of a grain of ipecac every hour.

For the exudative inflammation of the lungs the plans of treatment most frequently adopted are: Venesection, employed once, or repeated several times, the quantity of blood taken to be considerable. This plan is not pursued at the present time.

Large doses of calomel—12 to 30 grains—placed dry on the tongue—from one to four doses. This plan seems to answer well in some cases, to be of no use in others, and is attended with risk of producing salivation. Small doses of calomel, one-fourth to one grain, given every honr up to six doses. This seems to be of moderate efficacy. Drachm doses of magnesia sulphate, given every hour np to eight doses. This, again, does not seem to be of much use. The employment of either tinct. of aconite or tinct. of veratrum viride, in doses of from 2 to 5 drops, at first every hour and later at longer intervals, has given good results in the hands of some physicians.

Cold affusions to the chest, cold baths, blisters, the antipyretic drugs, quinine, and carb. of ammonia, have all been much used, but are all of doubtful efficacy.

The treatment of the exudative inflammation, which seems to me the most satisfactory, is that by the combined use of aconitine, digitaline, and whiskey.

The dose is $\frac{1}{6}$m. of aconitine and $\frac{1}{8}$m. of digitaline in tablets; the two drugs are given together.

The frequency of the dosing is regulated by the pulse. We endeavor to get a good pulse of about 80. In order to do this, it may be necessary to give the drugs every 15 minutes, one-half hour or every two hours, as the case may be.

If the pulse is slow enough, but too feeble, whiskey must be given at regular intervals. The patient must be watched. If carried too far, the pulse may fall to 30, and the patient pass into a condition approaching collapse.

This plan of treatment does not seem to be of any service in the cases in which the symptoms of poisoning are out of proportion to the extent of lung inflamed, nor in cases complicated with pericarditis. Such patients are not benefitted by any treatment, and are apt to die.

"It is for the patients of this class that the experiments which have been made with the inoculation of the blood serum of persons who have passed the crisis of pneumonia holds out some promise. The theory is, that the blood-serum of such persons contains an antitoxin capable of neutralizing the poison produced by the growth of the pneumococci."

Osler (1896) says: "Pneumonia is a self-limited disease, and runs its course uninfluenced by medicine. It can neither be aborted nor cut short by any known means at our command. Even under most unfavorable circumstances it will terminate abruptly and naturally without a dose of medicine having been administered.

"Pneumonia is one of those diseases in which a timely venesection may save life. To be of service, it should be done early.

"The indications for treatment are to lower the temperature and to support the heart.

"Fever alone is not, I think, hurtful, but it is impossible to differentiate the effects of fever and of the poisons circulating in the blood.

"Of efficient measures, cold water unquestionably heads the list. Perhaps the most convenient form is the application of ice bags to the affected side.

"When the temperature is above 103° to 104°, sponging may be resorted to, or the bath at 70°.

"The medicinal use of antipyretics is of doubtful propriety. Quinine has been much vaunted. From thirty to sixty grains will reduce the temperature in a certain proportion of cases one or two degrees, but in this respect it is far below other antipyretics. It frequently disturbs the digestion, and may induce cardiac weakness, though this I have never seen. Antipyrin, antifebrin and phenacetin have still their advocates.

"The progressive cardiac weakness is, after all, the most important enemy to fight in pneumonia.

"Alcohol is the remedy capable of tiding the patient over the most dangerous period.

"Strychnine is a most valuable remedy in doses of one-thirtieth to one twentieth grain. Digitalis is dangerous. Hypodermic injections of ether in sudden and rapid heart failure, and aromatic spirits of ammonia, are of great use.

"Expectorants are of little or no value. Opium and morphia hypodermically for pain in the side, and Dover's powder for the cough, are excellent."

Having bombarded your devoted ears with

the heavy artillery of our profession, I will now terminate this *engagement* of mine as the first one of an advance guard by giving you a fusillade from the *infantry*.

The treatment I pursue for pneumonia is as follows: If I see the patient at the very commencement of the attack—say the first six to eight hours—I envelop the entire chest, back and sides with a large, warm mush poultice. A small, stiff dry, one-sided affair enveloped in a thick cloth, is of no account. I make the poultice *very moist*, spread it thickly over a piece of sheeting sufficiently large to allow its two edges to meet over the front of the chest, cover the part in contact with the skin with cheese-cloth or other porous material, and after it is in place envelop the whole in oil silk. A poultice made and used in this way will keep warm several hours. But it must not be allowed to grow cold, as this not only defeats the object in view, but might prove dangerous.

I keep up this poulticing continuously for the first twenty four to thirty six hours, and afterwards use the oil silk jacket. I give with the application of the first poultice a full dose of Dover's powder, and after its effects are passing away, I follow with five to ten grain doses of quinine, given every two or three hours.

By this treatment I have succeeded, time and again, in cutting short the disease in two or three days. There is no question, in my mind, as to this.

These remedies produce free diaphoresis, quiet the action of the heart and lungs, relieve pain, and bring about speedy resolution of the engorgement.

If the disease progresses, I continue the oil silk jacket and the quinine, adding, if the skin is dry, two and a half to five grains of phenacetin to the quinine, and commence at once the use of brandy.

There is no remedy, in my hands, which has proven of such inestimable benefit as brandy. I mean *true* brandy, that made from wine, which has qualities peculiar to itself and unlike those belonging to other distilled spirits. I believe that brandy acts in pneumonia as an equalizer of the circulation, gives tone to the heart, lessens the respiration, is a diaphoretic, and in its effects upon the blood, possesses all of the characteristics of an active antizymotic.

We all know the quantity which, in health, would be injurious and possibly fatal, is in fever a tonic, and by its power of limiting the production of heat, it tends to preserve tissue waste upon which life depends. If, as is altogether possible, this latter property is due to its power of stimulating the exhausted nervous system, and thereby exciting the distended capillary blood vessels to contract, it is evident less blood will reach the tissues, that less heat will be developed and less waste of tissue result. This diminished waste is represented by the smaller amount of carbonic acid exhaled from the lungs and of urea secreted by the kidneys. It is, therefore, as a waste preserver, *a food also.* I have frequently given with success to children six months old a teaspoonful of the best French brandy every half hour to one hour, several days in succession in lobar pneumonia, and no other remedy, when nothing else, in my opinion, would have rescued them from certain death.

If resolution is slow, I use a large fly-blister; and if, as sometimes happens, the consolidation degenerates into chronic or interstitial pneumonia, I use iodide of potash and cod liver oil—repeating the blisters from time to time. This condition sometimes terminates in gangrene, when antiseptics are to be used.

I wish to mention, in conclusion, several cases which, to me, were of absorbing interest.

Case I was the son of Mr. John Burns, of Towson, which occurred twenty five years ago. The boy was taken suddenly ill with intense congestion of both lungs, which has been aptly termed "apoplexy of the lungs." He had fever, an alarming dyspnœa, fine crepitation throughout both lungs, excessive hæmoptysis, face livid, pulse thready, and other symptoms of approaching collapse.

I had him stripped of his clothing, sat him in a tub, poured bucket after bucket of cold pump water over him, giving him from time to time freely of brandy, and when reaction came on, enveloped him in a blanket and placed him in bed. The next day he was playing about his room, well.

Case II.—Some four years ago a young girl in the employ of Captain John Ridgely, of Hampton, had an attack of double pneumonia following the grip. Her lungs passed rapidly into the stage of consolidation; her temperature reached 106°, delirium ensued, which was so violent as to require the constant assistance of two trained nurses and others in the house to keep her from injuring herself.

I had followed my usual treatment, with the addition of antifebrin, spirits of mendereri, and carbonate of ammonia, without reducing the temperature or controlling the delirium. I had her stripped and soaked her continuously from head to feet in ice water, when, after twenty-four hours, her temperature fell to 102° and the delirium subsided. In two weeks resolution was perfected and convalescence established.

Case III.—Last spring I was called in consul-

tation with Dr. Massenborg to see a sturdy boy, the son of Mr. Allen, of Towson. He had been sick two days with croupous pneumonia of the lower lobe of the left lung. Fine crepitation still existed, but there was slight dullness, showing commencing consolidation. His pulse was weak and intermittent, temperature 106$\frac{3}{5}$°, he was delirious, and could swallow nothing. The doctor had commenced ice water spunging. We stripped him and continued the ice water over his entire body, and after four hour's use his temperature fell to 102°, and in a week's time he was well.

This case seems to be one of those in which the symptoms were entirely out of proportion to the physical signs, and were due, no doubt, to the toxin of the pneumococci.

I make it a rule always to conserve the digestion, allow plenty of sleep, good nourishment, and keep the bowels open.

I should not hesitate a moment to use the lancet if I met with the robust type of pneumonia.

When I entered the Baltimore City and County Almshouse Hospital in 1854, bleeding was much used. I bled frequently then, but it has been many years since I have deemed it necessary.

The pendulum appears to be again swinging to the bleeding point. So we go. *Tempora mutantur et nos mutamur in illis.*

GONORRHŒAL OPHTHALMIA.*

By ALBERT EDWARDS WILSON, M. D., Norfolk, Va.

Gonorrhœal ophthalmia is a disease of great interest to the profession at large, for in most instances the patient first consults the family doctor. Its ravages are of the gravest character, in that in many instances it causes a life of misery, compelling the patient to be led from door to door, and to him is denied the most pleasing of all sensations—that of sight.

The term *gonorrhœal ophthalmia* is applied to the affection as seen in adults, distinguishing it from ophthalmia neonatorum, which though, in the majority of cases, due to a like cause, is far more readily curable. I will confine my remarks to the disastrous and dreaded division as seen in adults.

Gonorrhœal ophthalmia is a highly infectious, inflammatory condition of the mucous membrane of the eyeball and lids, with an incubative period of about two days. This inflammation is the result of inoculation with the specific organism of gonorrhœal urethritis, discovered by Neisser. It is a diplococcus, readily seen (by ordinary methods of staining) in pus from the infected eye.

In nearly all cases the disease is readily traced to gonorrhœa—usually the right eye, as the hand on that side is used more frequently about the face and the genitals.

Seldom do both eyes become infected at the same time.

On the other hand, in infants both eyes suffer simultaneously; but when proper precautions are used, it is rare that the other eye becomes secondarily involved; even if it does, the inflammation is of a lower type.

The conjunctiva is not easily infected. How many people daily present themselves for treatment of gonorrhœa whose hands become contaminated, and yet how seemingly rare are gonorrhœal eye troubles? Not only is the virus conveyed by the fingers or handkerchiefs of the individuals to his own eyes, but to innocent persons through the medium of towels, etc.

Too much emphasis, therefore, cannot be placed on the injunction to avoid using towels in public places So few people are cognizant of the danger to the eye from gonorrhœa, that as physicians, we should instruct them on the subject. An ounce of prevention is worth a ton of cure, when applied to this grave disease.

I recollect Dr. Chisolm relating a case of a good, pious old gentleman, who consulted him about an eye. On being informed that he had gonorrhœal ophthalmia, he became indignant at the idea of such a thing Some time after, the old gentleman informed him that he had traced his disease to a towel, used by a son having urethral inflammation. No doubt many cases have just such an origin.

Much has been said and written about pyosalpinx and its relation to gonorrhœa; but we do not sufficiently warn young men of the danger of gonorrhœa to the eyes. Who of us has been confronted by a blind young man, saying, "You never warned me; see the result!"

According to my experience, many of the infected eyes have an element of traumatism as a predisposing cause for the outbreak. For instance, a man having gonorrhœa gets a cinder, grain of sand, or what not in his eye; and in his efforts to get it out the conjunctiva is injured, and the cocci take advantage of the lowered vitality of the part. I submit a few cases coming under my observation.

A conductor on a railroad train, having gonorrhœa, got a cinder in the right eye. He suc-

* Read before the Seaboard Medical Society during its first session, January 21, 1898, in Norfolk, Va.

ceeded in removing it, but at the same time planted the cocci in the abrasion.

A wagon driver of this city, while having gonorrhœa, got a grit from the street in his eye; he succeeded in getting it out, but this was succeeded by gonorrhœal ophthalmia.

A countryman, having gonorrhœa, got a piece of wheat-beard in his eye; he wiped it out, but likewise had gonorrhœal ophthalmia.

It is not always easy to get a cinder or what not out of your own eye, or to have it removed by one not expert in such things. Consequently there is often-times a great deal of unnecessary manipulating.

Not having seen it mentioned, I call your attention to traumatism as an important factor in the causation of many cases of gonorrhœal ophthalmia.

Sometimes the physician, off his guard, may attribute the initial symptoms of a grave disease to the injury. Hence, *always* inquire as to the existence of gonorrhœa, or probable exposure to the same as by towels, etc. Information may be such as to compel a guarded prognosis.

Gonorrhœal ophthalmic inflammation is of a grave character almost from the beginning—marked by injected conjunctival vessels, lids red, hot, swollen and copious lachrymation; the eye is painful with more or less burning sensation, and usually there are constitutional disturbances, shown by increase of one or two degrees of body temperature, with its concomitant symptoms. The degrees of inflammation depends largely upon the stage of the urethritis—being much more severe during the first two weeks, though a gleet is quite sufficient to produce alarming symptoms.

As the ophthalmia progresses, the watering diminishes, and the secretions become more and more creamy and abundant. The upper lid is now very red on the skin surface—hanging down over the lower one, forming a false ptosis, remaining so for two or three weeks—the patient having little power to raise it, owing to the great infiltration, consequently thickening and stiffening of the part. Great care and gentleness should be exercised in handling such an eye, for the parts are extremely sore, and require skill to successfully open it. Do not be too hasty in separating the lids, for sometimes the pus spurts, owing to the great pressure, and one not experienced is in danger of becoming infected.

If one should be so unfortunate, let him immediately put a drop or two of 1 per cent. solution of silver nitrate in it, as nothing is so potent in the destruction of the gonococci.

As already stated, the eye in the beginning is simply red, but in a day or so there is quite a change in the scene. No longer can the blood vessels be seen owing to the infiltrated œdematous conjunctiva and subconjunctival areolar tissue—such condition being technically termed "*chemosis*." The conjuctiva, as you know, is attached to the ball at the sclero-corneal border, though its epithelial layer is continued over the cornea as its anterior covering.

Now, when it becomes much infiltrated, it projects over the corneal border almost to the extent of hiding it, in some cases, giving the small cornea in view a deep set appearance; hence the term "*chemosis*." This forms one of the chief sources of danger to the cornea, strangling and choking the channels through which it is nourished, thereby lowering its resistance to infection. In many cases, at an early date, we see the cornea sloughing in part or whole, with very rapid progress. I recollect a patient, coming for the first time late in the afternoon; the cornea was not invaded to the extent of a slough, though it had a smoky appearance; but early the following morning there was a ring of sloughing around the outer margin. This was a neglected case; the man considered the trouble due to irritation from a foreign body.

I mentioned "chemosis" as one—perhaps the chief—of the dangers to the cornea; but closely following is the danger of pressure from the swollen lid and the irritation from the pus, if allowed to accumulate The iris is usually implicated along with the cornea, as shown by increase in the pain; but to discuss all of the possibilities, such as irido-cyclitis, choroiditis, or a general suppuration of the whole eye and orbital tissues, known as panophthalmitis, with its dangers of extension to the brain, through the meninges, or the possibility of sympathetic ophthalmia, would consume too much time.

As a rule, the greatest dangers occur in the second week, when the highest inflammation is reached, after which the symptoms abate, requiring weeks and even months to find the eye entirely free from inflammation.

In the treatment of gonorrhœal ophthalmia, I believe that the first and foremost procedure to a successful issue, is the selection of two competent nurses, using freely and frequently some mild antiseptic solution to cleanse the parts, preferably boracic acid, gr. xx, to the ounce of water. These cases are dangerous in a household; many articles may become contaminated. Hence, the patient should be hurried to a hospital, if possible, just as soon as the diagnosis is made, and placed under the

care of a physician accustomed to handling such cases.

It is my habit to place the patient in bed, giving a saline purge, and keeping him upon a low diet so long as the fever lasts; after which, good food and tonics in general are supplied. As gonorrhœa is usually present, suitable remedies are begun at once. Before pus appears, boric acid drops, in the strength mentioned, should be used several times during the day, but as a rule, this stage has passed, and there is more or less pus formation and redness of the lid when stronger antiseptics are called for. It is not necessary to discuss the merits of the different drugs; suffice it to say, that the astringent and germicidal qualities of the nitrate of silver still lead in potency against gonococci, and with minimum danger to the eye when properly used. But, like the wrong use of atropia, the agents just mentioned can do much harm when improperly and indiscriminately employed.

The strength of the silver nitrate solution may range from gr. x to gr. lx to the ounce of water. The former strength may be used as drops, twice daily; but the stronger solutions are to be applied to the lids, especially the fornix, once daily, according to the severity of the case or the reaction from its use. Cocaine relieves the pain somewhat when using the strong solution (absorption prevented by the inflamed tissue).

In this pus stage, is the time for vigilance on the part of the nurse. The pus forms rapidly, and, as heretofore explained, should not be allowed to remain. Careful washing, day and night, every fifteen minutes—using small pieces of absorbent cotton—should be maintained. Upon this cleansing and use of silver nitrate, when taken in time, hinges the result.

Benefit and comfort are derived from external applications to the hot lid. While some use hot water, I am quite certain that ice-cold will give the best results. I order absorbent cotton placed on a block of ice until cold, then transferred to the lid, and allow it to remain for a few minutes. Repeat by the process until the redness, swelling and heat subside.

Dry heat, such as given by the Chinese hot box, has its place later on, for the relief of temopro frontal pain, a result of iritis and involvement of structures beyond. The cold is to reduce inflammation; the dry heat relieves pain. Sometimes we are compelled to resort to anodynes.

When "chemosis" occurs, free clipping with a pair of scissors is beneficial—relieving the engorgement and reducing the tension of the circum-corneal tissue. This may be done daily, or according to the results obtained by so doing. Bleeding will be free; so be careful to have the head turned on the side of the diseased eye, thereby preventing the possible danger of infecting the sound one.

As one of the dangers to the cornea is pressure of the lid, some advocate slitting it upward in the centre, leaving the two flaps on each side. While I have never practised it nor seen it done, I believe such a procedure will result favorably, for it not only relieves the pressure, but enables the attendant to cleanse the parts thoroughly.

As a rule, it is best to resort to atropia early, dilating the pupil, and keeping it so by instillations of the mydriatic, once daily; for the iris may become involved almost before we are aware of it, and independent of corneal slough.

Extensive sloughing of the cornea is, to a great degree, due to delay in proper methods of treatment. Realizing the gravity and responsibility, how vigilant and persistent should we be in doing the best we can to arrest a disease so disastrous to vision. Some advocate additional local measures for the slough, galvano-cauterization, or with a strong silver solution gr. lx, to the ounce. Either one is good, but whichever is selected should be carefully used.

The vision permanently suffers in all cases of gonorrhœal ophthalmia, from total defect to total loss. But when the cornea seems to be swept away entirely, we cannot predict the final result, for it is surprising to see what useful vision remains in many such instances.

In the event of general suppuration of the eye or total destruction of the cornea, enucleation is called for, but I have not time to enter into when and how to do it. For the same reason I have been compelled to leave out much that might be said on the subject.

In regard to the protection of the sound eye, leave it open save when the patient is sleeping; then cotton and bandage are to be used. I know that I will meet with opposition, for many other oculists bandage the sound eye from the beginning, keeping it so, but I consider it more risk to be handling the good eye than to leave it open, warning the patient and attendants of the dangers and how to prevent them.

GASTRIC DISTURBANCES DURING GESTATION.*

By FRANK H. HANCOCK, M. D., Pinner's Point, Va.

From the constancy with which this gastric disturbance is manifested in the early hours of the day, and the relative severity at that time, it is usually spoken of as morning sickness. Morning sickness begins about the time of the first menstrual suppression following conception, and lasts with varying distress until the fourth month or longer.

From the almost constant accompaniment of this phenomenon with gestation, its occurrence as an initial symptom is held to be a reliable sign; while its absence in the presence of other symptoms affects a diagnosis of pregnancy until confirmed by later positive signs.

This distressing disorder, which so thoroughly enervates the system, through the decreased appropriation of nutriment, is not equally severe in all cases; nor would we expect it usually to be in those women who have not, for the sake of grace and beauty of form, destroyed the symmetry and anatomical beauty of their pelves by adherence to the rigorous severity of dress—thus gaining for themselves perpetual local discomforts, and the certain impairment of general health.

There are differences in this pathological process, for pathological it is; and although nature originally designed it as a necessary complement of fœtal gestation, it would be none the less a morbid expedient.

Some cases, then, are more prolonged and affected than others. Disgust for food takes the place of appetite, and perverted appetences wreck the system by impossible desires.

In regard to the "longings" of pregnant women, it may be as well to say that increased intelligence among the laity, and an addition of common sense to the profession, have mitigated the influence of this once powerful contingent. As illustrative of its ancient significance many interesting cases are mentioned in books.

Causes:—Like some diseases whose specific causes are not known, the nausea and vomiting of pregnancy are credited with many factors. Every factor supported by theories, which contradict and undermine themselves, are readily refuted by others.

The first impression in studying this question, is, that there is a scarcity of tangible thought, an incongruous state of ideas, which, as an excuse for the profession, we attribute to past indifference to study an investigation of the subject. Familiarity teaches us differently, and we find the difficulty is in harmonizing the many plausible suggestions.

The object of this paper will be to consider the causes of the disorder as they appear supported by facts and circumstances, and in that connection special attention will be paid to a recent article by Dr. Wm. S. Gordon, of Richmond, Va., read by title before the Medical Society of Virginia, at its meeting held at the Virginia Hot Springs, September, 1897.

Dr. Gordon, after a careful review of the attendant circumstances, concludes that there is some special reason for the nausea and vomiting of pregnancy aside from the common reflex theory. This he considers to be the impoverishment of the maternal nervous system by the withdrawal of phosphorus for the supply of the uterus and its contents, and announces it as a suggestion likely to be substantiated by future consideration.

A complete solution of the problem is not claimed, but it hopes to call attention to the paper, awaken thought and stimulate debate. This is my apology for the part this paper takes in the discussion.

In strict obedience to a standard of judgment it is essential that before accepting the opinions of others, those opinions must conform, in some degree, to our own. Theories so advanced as to be beyond the support of substantial reasoning, should be carefully considered before being accepted as facts, or dropped as matters of fanciful thought. And in this consideration I hope to give due emphasis to all the influences Dr. Gordon has brought to the support of his theory as to the nausea and vomiting of pregnancy.

For what purpose has the impoverishment of the maternal nervous system been affected this early in pregnancy, almost simultaneous with the initial change of fœtal gestation?

He, himself, tells us that early pregnancy is functionally very complex, and equally as normal as menstruation.

Inasmuch as the withdrawal of phosphates is the cause of the disorder, the withdrawal must *precede* the effect it produces, the actual manifestation, which would place it somewhere about the time of conception.

This demand for phosphates, then, is created to supply nutrition to the ovum, in some instances before it reaches the uterus, according to Dr. Gordon's own reckoning, as in a case cited by Dr. Montgomery. He says: "I attended a patient who was married on Monday

* Read before the Tidewater Medical Association, during its first session, Norfolk, Va., January 20, 1898.

and began to be squeamish on Saturday; her delivery took place in nine months." Therefore, if we accept the analogy said to exist between pregnancy and menstruation, the theory can not hold. Either the one or the other is incorrect. The statements are incompatible.

But admitting the theory for present purposes, what condition has arisen, it may be asked, to occasion this withdrawal of phosphates at times almost coincident with conception?

If beginning pregnancy is little more than a mere congestion of the female generative organs, which normal menstruation is, why this depletion of the nervous system? It cannot be that a system has been inaugurated without purpose, whose association with pregnancy is so common as to make it epidemic with that condition. The giving up of phosphates by the nervous system, must be in response to some demand from other tissues, or else they are simply ejected by a pathological process yet unheard of. Evidently, it is supposed to be for the supply of the embryo.

What are the conditions of gestation at this time, liable to create such a demand, or prior to this when the phosphates are being withdrawn?

After conception, segmentation, or cleavage of the ovum takes place. Repeated subdivisions follow, and with arrangements of the cells the ovum passes into the uterus some eight or ten days or more after fecundation, and is there surrounded by the hypertrophied mucous membrane of the uterus, which enters into the formation of its deciduous membranes and placenta.

At the end of the first month the embryo is said to weigh 0.8 of a gramme (12 grs.), and is about 13 mm. long (one-half of an inch). *In this time* some changes have occurred initiative to future developments, as the heart, nervous system, extremities, and the presence of soft cartilage in the places of future bones.

In the second month more character-formations occur, many material changes take place, and the embryo reaches a definite shape.

The third month is productive of developments discriminative of this period. The bony system of the adult, which in the embryo is mapped out in hyaline cartilage, begins to assume a permanent form.

The soft cartilage, composed of scattering cells, imbedded in an albuminous matrix, becomes calcified by a deposition of lime salts, which is absorbed, in turn, as ossification proceeds, and true bone is formed.

In this metamorphosis, to the animal part is added the more important constituent, earthy matter, the chief salt of which is calcium phosphate, and the yielding nature of cartilage is supplanted by the hardened texture of ossified bone.

The assumption of a permanent form upon the part of this tissue, is significant of like changes in other tissues, and the fœtus passes on to perfection and vitality.

This detailed attention is given to fœtal development for the exact idea it carries, for the re enforcement it gives to the statement that up to the third month of pregnancy, when the ossification of bone begins, not a single thing has happened, not a change ensued, in which phosphates are sufficiently involved to warrant the supposition entertained by Dr. Gordon's theory.

If at the expiration of the first month the embryo with its membranes were entirely composed of phosphates, it would not be one-third of the phosphates secreted by the kidneys every day.

It cannot be said that the phosphates are appropriated by early uterine changes, for as an argument, contingent upon the fact stated, it is declared in that paper that the local changes, anatomical and physiological, are less complex than many morbid changes unattended with nausea.

If the phosphates, the essential ingredients of the nerves, are withdrawn to supply a want, why is not the relief process continued? There is no corresponding provision for their appropriation, while the withdrawal takes place in the first one or two weeks, the placenta, the fœtal organ of nutrition, respiration and secretion, does not become distinct until the third month, and is not completed until the end of that period. Surely such inharmonious action cannot be carried on for the relief of a physiological process.

Again, it is stated in support of this theory, that during the first half of pregnancy, the period with which nausea and vomiting are usually associated, the fœtus is more rapidly developed, and that the maternal system is correspondingly exhausted.

While that may be technically true, it is known, and has been shown here, that the early developments of pregnancy are those in which phosphates are not concerned. It is long after the establishment of nausea and vomiting that an active demand for phosphates is created.

If it is necessary to demolish the nervous system, and upset the whole digestive apparatus to supply an embryo weighing twelve grains, and measuring one-half of an inch in

length, upon what supernatural power does nature call, or from what mythical source does she gather strength to sustain a fœtus weighing five pounds and measuring sixteen inches in length? It would seem that the whole nervous anatomy might be transferred to the pelvis, in the execution of such a prodigy.

If it is true that the nervous system is so sensitively dependent upon a normal supply of phosphates, the effect must be radical, when to the demands created by a rapidly developing fœtus, is added the anæmia of a system long deprived of food.

If the supply of phosphates to the embryo causes nausea and vomiting, the same theory must apply to the child fattening upon its mother's milk, the chief ingredient of which is calcium phosphate, and the woman would vomit through all her puerperium.

It is mentioned as a fact, which substantially supports this theory, that early in pregnancy the reaction gotten by Tessier's fluid in the urine, gives crystals imperfectly formed because of a deficiency of phosphoric acid. This is corroborated by similar reactions in other diseases—kidney and heart affections, where the urine is diminished.

It must be admitted that this tends strongly toward the theory that the fœtus is in some way responsible for this deficiency, and it must be so, if pregnancy were the only agent acting at this time.

But are we surprised at this deficiency? Can it not be readily accounted for? Do we forget that anæmia must follow prolonged vomiting; that a withdrawal of food must lessen the amount of its ingredients excreted; that the phosphates are admitted to the system through animal and vegetable foods which at this time do not reach it? How impossible it would seem for the phosphoric acid crystals not to be changed, or for them to remain normal in the urine, when the supply of phosphates is cut off!

The altered appearance of the woman is more decidedly expressive of the wants of her tissues, than is the altered formation of these crystals.

It is not hard to understand that the irregular action, or deprivation of the digestive functions in the early months of pregnancy, should cause imperfect nutrition. As observed by Stoltz: "The pregnant woman emaciates during the first month. Her appearance is bad. That is to say, her features are drawn, her eyes surrounded by dark circles, and her expression becomes more or less dull. She is sluggish, melancholy, drowsy. In a word, there is developed a condition more or less resembling chloro anæmia."

Does it not seem strange, that in searching for a theory, this general appearance of the system should go unobserved, and a microscopic change in a urinary ingredient, occurring coincidently, be brought forward and used to revolutionize thought upon this subject?

Are the effects of the continued rejection of food by the system to be overlooked, and the change in the phosphate crystals to be ascribed to incipient pregnancy? Are we to mistake effect for cause?

Reflex Theory.—Diseases, that some decades ago were spoken of as reflex, have been since taken from that category, and are now many of them recognized by their individual symptoms as familiar nervous diseases.

Thus in the cerebral palsies of childhood, anterior myclitis, epilepsy, chorea, and many others, the patients were anxiously examined for evidences of phimosis, strictures, swallowed pins, digestive troubles and constipation. If any of these were found, and they usually were, the mental symptoms were considered entirely explained, and they were treated accordingly. As neurological knowledge developed, these variously acting diseases have been taken from the one wide name that embraced them all, and classified according to the seat of their pathological lesions, and their specific symptoms.

This rearrangement has eliminated true nervous disorders from the diseases of other tissues, and placed reflex nervous disturbances upon a plane of scientific importance.

So thorough has been the study in this direction, that but few diseases are now believed to be of reflex origin; and I claim that the fact of the nausea and vomiting of pregnancy being still considered by neurologists as belonging properly to that class, is not the least argument that might be used in its favor.

But we should not under-estimate the resources of reflex action. The anatomy of the combined tissues will dispute such a position.

Upon the ramification of the nerves impulses are sent from every organ and tissue to the central nervous system, acquainting the centres with the conditions of each, and determining them as to the regulating influences sent back.

This expression upon the part of the central nervous system in response to influences received from the periphery, indicates that a susceptibility to reflex action is its peculiar function—that its force in the human economy is to receive and transmit impressions. And the connection claimed for it with the nausea

and vomiting of pregnancy, is not a radical theory entirely void of proof.

Nor are we disregarding the knowledge recent research has given us, and ascribing to a disease a name that means nothing. It must be of consequence that simultaneous with early congestion of the uterus—of all organs the most sensitive to reflex expression—there occur phenomena whose entire dependence upon a pregnant uterus is known.

The intimate nervous connection of the intestinal and pelvic viscera through the branchings of the solar and hypogastric plexuses, readily explains the numerous reflexes these organs are subject to; and their susceptibility to reflex action must be a matter of importance in considering this question.

We know the importance attached to nausea and vomiting in the diagnosis of peritonitis. We have instances of the same in pelvic hematocele, pelvic peritonitis, salpingitis, chronic endometritis, areolar hyperplasia, uterine displacements, granular degeneration and other irritation of the cervix.

The direct connection of the uterus with the kidneys through the ovarian plexus, and the special work of those organs in the reflex direction, is of moment.

We, of course, recognize in this applied analogy that pregnancy is not to be confounded with disease.

We have mentioned these diseases to show the ability of the nerves supplying these parts to express themselves when subjected to unusual influences; and we claim this same expression upon the part of the uterine nerves in the presence of unusual forces as the true cause of the nausea and vomiting of pregnancy.

The fact of its lessening as pregnancy advances, may be explained upon the ground of habit, or tolerance.

The pressure by the strong uterine muscular fibres possibly produces some local change in the nerves pressed upon, making them for the time less responsive to ordinary impressions.

The relation between the effect here upon the digestive system, and that produced by ocean travel, is interesting.

While the cause of the one is a question, the existence of the other is conceded to be a reflex incident upon change which habit soon corrects.

If it is believed to be the case in ocean travel, is it very confusing to say it of pregnancy?

Why nature takes this method of expressing herself in the presence of new surroundings, is a question that has not yet been explained. We know that the usual effect of motor impulses to the tissues is one of contraction, and that these impulses start in response to impressions sent up from the periphery. It must be that in early pregnancy the uterus is not subject to such motor influences; that the afferent impulses are metamorphosed—changed before reaching the uterine motor centres, and that the stomach is influenced instead.

That some women are exempt, may be explained by the caprice to which all reflexes are subject. It will, no doubt, be admitted that this action upon the part of reflexes is a marked feature, a distinct characteristic. What fact will be offered in explanation by those who attach importance to the theory of the phosphates?

It is asked why nausea and vomiting do not accompany menstruation.

Aside from the influence inheritance and monthly recurrence must exert toward habituating the system, the more important fact remains that the conditions are not the same. There is congestion in both; but in pregnancy the congestion increases and is permanent, while in menstruation it reaches its height in from two to three days, and begins to recede.

In pregnancy the os is rigid, and nothing escapes from the uterine cavity; in menstruation the os is open and everything escapes.

With one the uterine cavity is being gradually distended by the presence of the embryo, and the accumulating secretion of the uterine mucous glands; with the other there is thorough drainage.

Treatment.—That the results of treatment have been indefinite is shown by the number of remedies used. The fact is, the stomach has been treated as the cause of the disorder, with which it has no more relation than the electric wire has to the current it conducts. It should be remembered that there is no gastric disease, but that the trouble is a nervous manifestation, which can be ameliorated if not controlled.

Special attention should be paid to habits and surroundings. It is well to examine the uterus as to position and condition. If inflammation exists, it should be treated, or a displacement corrected. Replacement of the uterus has at times entirely relieved the nausea and vomiting of pregnancy. The importance of this is seen when we consider the radical effects of compression from lacing, and the weight of heavy skirts.

The uterus is entirely occupied during pregnancy, and should not be submitted to the pressure of splint-like apparatuses applied above it, or pounds of heavy skirts piled upon its fundus.

With these causes acting, no medicines can have any possible effect. Rest, quiet, and hygienic measures are of great importance. Richly nourishing food in easily assimilable proportions should be given. Chloral and the bromides are often of use in subduing irritable nerves. As in other conditions of anæmia, strychnine, phosphates, iron and quinine are indicated. Particularly are these applicable to a system that has been long unable to assimilate food, and should be insisted upon when nausea and vomiting are prolonged in pregnancy.

P. S.—A case was reported in the discussion following the reading of this paper, in which drugs of every class had been used to check the nausea and vomiting without effect. Examination of the uterus showed a retroversion. The organ was straightened and the nausea and vomiting immediately ceased.

Aseptolin-Edson.

Chemically speaking, *aseptolin* is a solution containing about 3 per cent. of absolute phenol and 0.01 per cent. of a new pilocarpin salt (pylocarpin-phenyl-hydroxide; formula $C_{11}H_{16}N_2O_2.OH.C_6H_5$.

It is a fluid designed mainly for hypodermatic use, but may also be used by the rectum. When properly injected into the subcutaneous tissues little or no irritation follows, and there is consequently no danger of abscess.

The effect of injecting aseptolin is to greatly reinforce and increase the natural antiseptic power of the blood. In some diseases, as malaria, septicæmia, and la grippe, this effect is said to be so immediate that the disease is often cured as if by magic. In others, such as tuberculosis (phthisis pulmonalis), the effect is often slow and tedious, requiring most careful attention to adjuvant measures.

If the remedy is skillfully used, it is claimed that the practitioner will obtain a larger percentage of recoveries (55 per cent. to 60 per cent.) than by any other known treatment. It is not claimed that aseptolin is a "sure cure" for phthisis or any other disease, but that it affords the best known method of treatment for germ infection diseases.

Reports from physicians who have tested this preparation will be found on the advertising page.

Correspondence.

National Quarantine.

Mr. Editor,—The *Semi-Monthly* of December 24th contained a letter by Dr. Warren Anderson, of Pensacola, Florida, concerning "The Efficiency of the Marine Hospital Service in the Control of Federal Health Affairs," and in an editorial you ask for a careful consideration of its "unanswerable array of facts."

The profession of the South rightly look to the *Semi-Monthly* for a full, fair, and impartial view of such vital questions as public health. I feel sure, therefore, that you will, in a spirit of fairness, publish a correction of certain erroneous statements in Dr. Anderson's letter and answers to his *objections* to the "Marine Hospital Service assuming charge of affairs in yellow fever epidemics, etc.

His *first objection* is one relating to organic construction, the *second* being "largely an emphasis of the first." The statements therein, "that only applicants between the ages of 21 and 28 years are examined for admission to this Service," and that a young graduate from a Maryland, Michigan, or Massachusetts Medical College, standing an excellent but purely theoretical examination before the Board of Examining Surgeons, is dispatched by his chief to preside over the health destiny of New Orleans, Galveston, or Mobile," are untrue; the age limit he gives may be a mere inaccuracy, but the next is less excusable.

That "these officials are taken indiscriminately from all parts of the United States," is true of all Federal service, but "less than 5 per cent. of them belonging to south of latitude 37°, or that one likely to be invaded by yellow fever," is not true. Latitude 37° north is about the latitude of Richmond, and about 45 per cent. of the officers of this Service belong south of this line, and from States which have been invaded by yellow fever in recent years.

Over two or three times his "10 per cent. of the regular officers" have had experience with this disease, and the statement as to immunity is only less misleading than absurd; but were it true, we of Tidewater Virginia remember too well our terrible epidemic of 1855, when the forty-four gallant heroes so bravely and well fought this disease, and died before they were *immune*. Does the gentleman consider himself incompetent to treat scarlet fever or endometritis because, forsooth, he has escaped their grasp?

The Marine Hospital Service, in the event of

an epidemic, as would our small regular army in the event of an invasion, calls for and employs efficient volunteers, but each is nevertheless necessary as an organized and trained nucleus.

Dr. Anderson's *third objection* is based upon the "autocratic," "Cæsarian" government of the Service, its officials being responsible to no one but the head of the Bureau at Washington; this is and must be true of all efficient organizations. Every large body must have a responsible head; in this lies a strong point of Federal health control. All Federal organizations are responsible through the President and his subordinates to the people whom they serve.

Somewhat irrelevantly Dr. Anderson writes: "See the utter disregard manifested for the health of the people of Georgia in 1893, when the medical officer of the Service at the quarantine Station sickened with yellow fever—its first victim—was removed to the principal hotel at Brunswick, where he sickened and died and an epidemic of the dread disease followed."

Plausible to one not fully acquainted with the facts. But that neither the Marine Hospital Service nor Branham's death could have had any possible connection with the introduction of yellow fever into Brunswick, are proved by the following facts, which are to be found in the Public Health Reports, and in the statements of Brunswick physicians and reputable citizens.

The *Anita Berevind*, Capt. Biddle, from Havana, came to the local quarantine wharf of Brunswick for disinfection about 3:30 P. M. June 15th, 1893, was cleared, and proceeded up the Saltillo river early on the morning of the 19th. Capt. Biddle stopped at the Ocean House, Brunswick, from the morning of the 17th to the 19th. He was taken sick at this hotel, and died with yellow fever at Conquest's wharf, near Brunswick, June 25th.

The negroes who handled ballast at the Quarantine Station had free access to the town.

July 17th, the Spanish bark *Felo* arrived at the quarantine, in dirt ballast, from Havana; her mate was sick, and he was nursed *ashore*, and diagnosticated malaria. The vessel went to Brunswick July 29th; the mate, scarcely convalescent, was on board, and the cook was taken sick at the dock with the fever for which the master was afraid to have a doctor.

The men who discharged ballast, as usual, returning to their homes, and the infected dirt ballast was, in this case, as in all others, not submerged.

Up to this time, be it noted, the Marine Hospital Service had absolutely nothing to do with the Brunswick quarantine, and the *Felo* was about the last vessel passed by the local health officers.

August 1st, 1893, for the first time, and because of the open violation of law, and the inefficient management of the local quarantine, Assistant Surgeon Branham assumed charge for the Marine Hospital Service, and from this date only is the United States responsible.

Dr. Branham slept in the bed in which the mate of the *Felo* was sick, and was exposed to infection from ballast, but no vessels from infected zones entered from then until August 9th, when he was taken ill and was delirious. The *local health officer* diagnosticated his case *malaria*, and had him removed to the residence of his cousin, Dr. Branham; he was not at a hotel.

His case was diagnosticated yellow fever by Surgeons Carter and Murray, M. H. S., the local Board of Health dissenting.

There were other cases at the time, and there had been some in Brunswick before these, and Branham's case had nothing to do with the epidemic, save to bring the Marine Hospital officers to the spot in time to confine the disease to that section.

Dr. Anderson asks our sympathy for the Mississippi delegation, "pleading in vain for the removal of a near and constant menace to the health of their dear State—Ship Island Quarantine." And with absolutely no facts to sustain the assertion, he charges the able and conscientious officer in charge of that Station with the death of hundreds of citizens and the loss of millions of dollars—a very grave charge.

To show how near (?) a menace is the Station, it is only necessary to say it is as far from the mainland as Norfolk is from Newport News or Old Point—farther than the local quarantines of New York, Boston, Norfolk and other large cities.

The facts contained herein are to be found, Mr Editor, in public documents, which may be obtained by any one, and are detailed "*without malice toward any one or animus of a personal character*," but with a desire to advance the best interests of our State and country.

Respectfully,

HUGH S. CUMMING, M. D.
Assistant Surgeon M. H. S.

January 22nd, 1898.

Analyses, Selections, etc.

General Conclusions of International Leprosy Conference.

At the close of the debates of the International Leprosy Conference, Berlin, 1897, the Secretaries presented the following short report of the general conclusions of the Conference:

As might be expected, a considerable portion of the discussion related to the bacillus lepræ, which the Conference accepts as the *virus of leprosy*, and which for upwards of twenty-five years has been known to the scientific world through the important discovery of Hansen and the able investigations of Neisser.

The conditions under which the bacillus grows and develops are still unknown, as well as the way of its invasion of the human system; but from the discussions of the Conference, it seems probable that a unanimity of opinion will soon prevail in reference to its modes of subsequent dissemination within the human body.

Very interesting observations have been brought forward in connection with the elimination of the bacilli in large quantities by means of the skin and the nasal and buccal mucous membranes of lepers; it is desired that such observations be confirmed where opportunities occur. The question is of very great importance to those who are entrusted with the care of the public health, as leprosy is now acknowledged to be a *contagious disease.*

Every leper is a danger to his surroundings, the danger varying with the nature and extent of his relations therewith, and also with the sanitary conditions under which he lives. Although among the lower classes, every leper is especially dangerous to his family and fellow workers, cases of leprosy frequently appear in the higher social circles.

The theory of *heredity of leprosy* is now further shown to have lost ground, in comparison with the at present generally accepted theory of its contagiousness.

The treatment of leprosy has only had palliative results up to the present time. Serum-therapy has so far been unsuccessful.

In view of the *virtual incurability of leprosy*, and the serious and detrimental effects which its existence in a community causes, and considering the good results which have followed the adoption of legal measures of isolation in Norway, the Leprosy Conference, as a logical issue of the theory that the disease is contagious, has adopted the following resolution proposed by Dr. Hansen and amended by Dr. Besnier:

1. In such countries, where leprosy forms foci or has a great extension, we have in isolation the best means of preventing the spread of the disease.

2. The system of obligatory notification, of observation and isolation as carried out in Norway, is recommended to all nations with local self-government and a sufficient number of physicians (Health Officers).

3. It should be left to the legal authorities after consultation with the medical authorities to take such measures as are applicable to the special social conditions of the districts.

The Secretaries of the Conference were: Phin. S. Abraham, London; Ed. Arning, Hamburg; A. von Bergmann, Riga; E. Dubois Havenith, Bruxelles; J. J. Kinyoun, Washington; G Thibierge, Paris. Edv. Ehlers, Copenhagen, General Secretary.

Hydrozone and Glycozone for Gonorrhœa.

Dr. Warren E. Day, of Prescott, Arizona, reports (*N. Y. Med. Jour.*, Sept. 4th, 1897,)three cases of gonorrhœa, which he has successfully treated with hydrozone and glycozone. These are not only harmless, but the most powerful healing agents that he has ever used in a practice of over 35 years.

Case I—*June* 20.—Man with gonorrhœa of four weeks' duration; discharge profuse, micturition painful, and he had an acute burning sensation along the urethral tract. Pus sacs had formed in the canal, meatus was inflamed; gonococci were active, as determined by microscope.

℞.—Hydrozone ..... 1 part.
Sterilized warm water...10 parts.

M. S.—Inject one ounce four times daily.

After two days, hydrozone was reduced to one part in fifteen parts of water. In addition, on going to bed, inject equal parts of glycozone and glycerine. Stimulants prohibited, but ordinary diet not restricted. Gonococci indiscoverable in two days. Discharge lessened; painful, difficult micturition ceased, and in twelve days patient was well. Continence was imposed for two weeks. Potassium bromide and sodium bicarbonate were administered occasionally to make the urine alkaline and to quiet the patient.

Case II.—Married man contracted blenorrhœa from woman with "whites." Same treatment was used with such satisfaction that the

woman also was likewise treated. Each person was cured in three weeks.

CASE III.—Man, age 50, living 20 miles in the country—contracted gonorrhœa. No treatment during first ten days. When first seen, aggravated symptoms of gonorrhœa were present. Chordee every night was so severe as to run him "plumb wild." Ordered hydrozone only 1 part to 20 parts of sterilized water, as the urethra was very sensitive; there was also slight swelling of testicles, which would have caused apprehension of orchitic trouble if a stronger solution had been used. Glycozone, diluted with an equal part of pure glycerine, was ordered for the nights. Glycozone was also given internally in medicinal doses, to allay gastric disturbance due to nervousness. Treatment lasted twenty-five days, when patient returned to his cattle ranch well and happy.

Normal Size and Location of Stomach.

A. L. Benedict, A. M., M. D., Professor of Physiology and Digestive Diseases, Dental Department, University of Buffalo, calls attention to the fact (*Medicine*, February, 1898,) that it is difficult to find exact statements in text-books as to the *normal* size and location of the stomach; and it is by no means uncommon to find physicians making the diagnosis of gastric dilatation who are not able to state either just how large the stomach is, or how large it should be. Speaking from some six or seven hundred examinations by auscultatory percussion of normal and abnormal stomachs—accurate records of about 200 have been preserved—it may be stated that the area of the normal, empty, adult stomach, is an ellipse, whose major axis is inclined at about 45° from the horizontal, whose lowest point is about an inch above the umbilicus, and half way between the middle and the axillary lines, and whose right curve does not pass appreciably to the right of the median line, though the stomach itself does so. The area of the normal full stomach reaches quite to, or perhaps half an inch to the right of the median line, and the lowest point is not less than half an inch above the umbilical equator. Large, fleshy women often have a descent of the abdominal wall, so that the stomach, though by no means small, is two or three inches above the umbilicus. In children, the stomach is relatively larger than in adults, being absolutely of about the same size after the age of fourteen. Thus the adolescent stomach is not more than a quarter of an inch above the umbilical equator, and the stomach of a child of two or three years reaches fully to this line.

Phosphate of Soda for Urticaria.

Dr. Bernard Wolff, of Atlanta, Ga. (*Medical Standard*, February, 1898,) has used phosphate of soda in a large number of cases of urticaria during the past year, with such uniform success that he regards it as the master of the disease. *In acute cases, in adults*, he gives drachm doses of a supersaturated solution (the salt dissolves in its own water of crystallization), repeated every three hours or after meals; and in addition the following *antipruritic lotion:*

℞.—Pulv. calamin.
Zinc. oxide.....āā ʒiss.
Acid carbolic.....ʒss.
Aq. calcis .....ʒij.
Aq. rosæ.....q. s. ℥iv.
M. S.—Apply frequently and freely.

For children, the dose of the soda phosphate may be appropriately reduced, and the quantity of carbolic acid in the lotion diminished.

Under this treatment, acute symptoms subside in a few hours, and the eruption ceases to appear in from twelve to twenty-four hours.

In chronic urticaria, the relief is equally prompt, but recurrences are apt to follow. The remedy, however, should be continued until all tendency to recurrence of attack has disappeared. Patients do not acquire a tolerance for the drug; it may therefore be administered in unchanging doses as long as may be necessary without any injurious effect.

Sodium phosphate is one of the most reliable hepatic stimulants and intestinal antiseptics; and its curative influence over urticaria is probably based upon this phpsiological action.

Sodium phosphate is especially applicable in *urticaria of gastro-intestinal origin;* hence it is applicable to fully 90 per cent. of all cases.

The Fifth Annual Meeting of the American Medical Publishers' Association

Will be held in Denver on Monday, June 6, 1898 (the day preceding the meeting of the American Medical Association). Editors and publishers, as well as every one interested in medical journalism, are cordially invited to attend and participate in the deliberations. Several very excellent papers are already assured, but more are desired. In order to secure a place on the program, contributors should send titles of their papers at once to the Secretary, Mr. Charles Wood Fassett, St. Joseph, Mo.

Book Notices.

Stirpiculture: or the Improvement of Offspring Through Wiser Generation. By M. L. HOLBROOK, M. D., Editor of the *Journal of Hygiene.* New York: M. L. Holbrook & Co. 1897. Cloth. 12mo. Pp. 192.

As its title indicates, this book is directed to proposed improvements of the human species by attention to the laws of breeding. It seeks to teach how to put a sound mind in a sound body. The author recognizes that "we are not yet able to do it perfectly; our kowledge is too deficient; lack of interest is too universal, but we can make a beginning." Of course, the recognized laws of chastity form an essential element for all marriages. Hygienic rules must be obeyed. Parental training must be perfect. Education must be healthy. Morality must be instilled. Mother and father must be without fault. A theoretic baby is illustrated by the history of his own first born. The book is suggestive reading, and some good points may be got from it. But the "lack of interest" in matters relating to the raising of babies "is too universal" for the "society man or woman" to be profited by what this book says. And yet doctors here and there may be able to assist in making a beginning in the study of stirpiculture.

Saw Palmetto. By EDWIN M. HALE, M. D., Author of "New Remedies," etc. Philadelphia: Boericke & Tafel. 1898. Cloth, 12mo. Pp. 96. Price, 50 cents; by mail, 55 cents.

This little book gives the history, botany, chemistry, pharmacology, "provings, clinical experience and therapeutic applications" of a remedy of comparative recent introduction, and yet one which is constantly growing in favor. Its value in a number of diseases of the genito-urinary system has become well recognized. Written mostly from the homœopathic standpoint, there is much to confuse the physician in the "provings." But there are no practitioners who have studied the actions of the agent and put them to the therapeutic test that does not recognize its usefulness in many of the diseases of the mucous surfaces, in certain glandular troubles, etc. This book is the collection of a number of experiences of those who have used the preparations, and they are in general accord with those of practitioners of the regular school who have tried the several reliable preparations of the drug.

Manual of Clinical Diagnosis by Means of Microscopic and Chemical Methods By CHARLES E. SIMON, M. D., late Assistant Resident Physician Johns Hopkins Hospital, etc. *Second Edition, Revised and Enlarged, with 133 Illustrations on Wood and 14 Colored Plates.* Lea Brothers & Co., Philadelphia and New York. 1897. 8vo. Pp. 563. Cloth, $3.50.

When reminded that the first edition was in 1896, one sees how popular has been the demand for such a book. It shows the effect of education of the profession in a most striking manner; for simply to the old timey doctor who knows nothing of chemistry, microscopy, pathology, etc., and cares less about such things, such a book could not be in demand. And yet, how one can get along in this day without such helps to diagnose as are herein explained, it is hard to understand. "Chemical and microscopical methods are described in detail, so that the student and practitioner * * * will be enabled to obtain practical results." Of special use is this work as an aid to diagnosis in diseases of organs affecting the secretions, as of the stomach, intestines, kidneys, etc.; and without such help as this book gives, it is practically impossible to make a scientific diagnosis of many of the diseases of the stomach. Of course, it tells also of the microscopic diagnostic qualities of tumors, tissues, etc. If the doctor is too busy or not well enough informed to make the microscopical or chemical examination, let him have in association some one who is competent and has a sufficient laboratory for practical purposes. This is an excellent book for the purposes indicated by the title.

Notes on Principles of Surgery By BLANTON L. HILLSMAN. *From Lectures* by STUART McGUIRE, M. D., Professor of Principles of Surgery, University College of Medicine, Richmond, Va.; Surgeon to St. Luke's Home, to Virginia Hospital, etc. Richmond: James E. Goode Printing Co. 1897. Cloth. 8vo. Pp. 224. $2.

These *Notes* won the prize offered by Prof. Stuart McGuire for the best report of his "lectures," 1897. The report reflects great credit upon the author, and illustrates the excellence of the course of lectures conducted by the professor. While no attempt is made at originality in such a book, still it so thoroughly covers the field and is so thoroughly "up to the times," as to render it of great utility to the practitioner as well as the student. No college textbook on such a subject is better arranged, so that it may well be adopted as the class room book in other colleges—a guide to the professor as well as full notes for the student.

A System of Practical Medicine *By American Authors.* Edited by ALFRED LEE LOOMIS, M. D., late Professor of Pathology and Practical Medicine in the New York University, and WILLIAM GILMAN THOMPSON, M. D., Professor of Medicine in the New York University. To be completed in four imperial octavo volumes, containing from 900 to 1,000 pages each, fully illustrated in colors and in black. Volume III,—Diseases of the Alimentary Canal, Peritoneum, Liver and Gall Bladder, Spleen, Pancreas and Thyroid Gland, Chronic Metal Poisoning, Alcoholism, Morphinism, Infectious Diseases Common to Man and Animals, Miscellaneous Subjects. For sale by Subscription. Per volume, Cloth, $5; Leather, $6; Half Morocco, $7. Lea Brothers & Co , Publishers, Philadelphia and New York. 1898.

This *System of Practical Medicine* will be complete on publication of only one other volume (beyond that now presented for notice), which is already in press for early issue. One can scarcely appreciate the invaluable character of this *American System* to the general practitioner of this country, especially until he examines the volumes now ready. A most favorable "book notice" cannot adequately convey as thorough an expression of the practical merits of the work as even a cursory examination of its pages. Take this Volume III, for instance, the general contents of which are stated in the title—the articles are remarkably complete, ably written by eighteen of the most worthy of American authorities, and are thoroughly practical in those matters that can be so presented. Plates are introduced wherever they can be of special service; and the full therapeutic directions given at the conclusion of each chapter or section form a feature of the *System* which must commend it. The fact that Messrs. Lea Brothers & Co. issue this as one of the standard works of the age, is guarantee that the style of the publication—the accuracy and neatness of print, cover, etc.—is as near perfect as any such work is apt to be. Of course, the volume has an excellent index to assist one in ready reference to subjects discussed in it.

Ambroise Pare, and His Times 1510-1590. By STEPHEN PAGET. *Illustrated.* G. P. Putnam's Sons, New York and London. 1897. Small 8vo. Pp. 309. Cloth, $2.50. (For sale by Geo. M. West, Richmond.)

All doctors are presumably familiar with the name of Paré, as a surgeon. Yet we venture there are but few who know anything of his personal life. This biography is written with the pen of a scholor—giving an account of the events that developed the greatness of the man as well as the surgeon. And yet throughtout his record we find that "character, in the long run, avails more than circumstances." While, of course, viewed in the light of the present day, much of his surgery appears amusing, it must be remembered that in realty Paré was a poineer, and made many advances upon the doctrines and usages of his times. Such a book as this, dealing with a period of prejudice and ignorance, yet illustrates how industry on the part of one whose character was so exemplary, combined with an earnest desire to do good to and advance the cause of the healing art, should be placed in the hands of the young doctors of to-day in order that they imbibe the spirit which actuated this great and good surgeon. Then could we look forward to the preparation of that code of honor in the profession that in a former day was one of its chiefest glories. The book in every respect is a most entertaining and valuable one to the library of every one who reads his books before placing them on the shelf.

Elements of Latin. *For Students of Medicine and Pharmacy.* By GEORGE D. CROTHERS, A. M., M. D., Teacher of Latin and Greek in the St. Joseph (Mo.) High School; formerly Professor of Latin and Greek in the University of Omaha; and HIRAM H. RICE, A. M., Instructor of Latin and Greek in the Boys' High School of New York City. 5¼ by 7½ inches. Pages xii—242. Flexible Cloth, $1.25 net. The F. A. Davis Co., Publishers, Philadelphia, New York City, Chicago, Ill.

This is a book that should be brought to the attention of every medical student who is not familiar with Latin when he begins his course. To the professor in medical colleges it becomes more and more apparent that much of the difficulty of comprehension of books and lectures lies in the lack of primary education in Latin and Greek. We have therefore examined this book with a special interest, and the more we see of it, the more are we persuaded this is the book needed. In medical colleges now-a-days there are many who take lessons in elementary Latin in order that they may the better understand nomenclature and terminology; and among the students there are some who have classes in Latin. To all such we most unreservedly recommend the examination of this little volume as a text-book.

Editorial.

Serum-Therapy Report to Richmond Academy of Medicine and Surgery.

The Report in this issue is, so far as we are aware, the first systematic attempt at a collective investigation of any disease in Virginia. In examining that report one is surprised at the small number of physicians who have heretofore used serum therapy in practice. Indeed, the reports regarding all else than *diphtheria*, were so few, and so irregularly returned, that the committee could not satisfy itself as to the advisability of even attempting tabulation; as to diphtheria, however, the report is thoroughly confirmatory of all the good that has been said about diphtheria-antitoxin timely used If in doubt as to the character of a deposit or the laryngeal symptoms in a given case that strongly resemble diphtheria, *use the antitoxin* while waiting for the result of the bacteriological examination. The report as printed was the subject of discussion during the first February meeting of the Academy, report of which discussion has not yet been received.

Missouri State Board of Health.

Dr. Paul Paquin, St. Louis, Secretary, announces that the Board will make free examinations in the following classes of cases:

1. Microscopical and bacteriological analysis of throat specimens for the diagnosis of diphtheria.
2. Like analysis of blood for the diagnosis of typhoid fever.
3. Like analysis of sputum of suspects for the diagnosis of consumption—particularly among school teachers and children and their parents.
4. Bacteriological investigation of well waters or other waters suspected of being capable of causing, or having caused typhoid fever, as far as possible or useful at a distance, to make such investigations.

An Army Medical Examining Board

Will be in session at Washington, D. C., during the month of May for the examination of candidates for appointment to the Medical Corps of the United States Army, to fill existing vacancies. Persons desiring to present themselves for examination, will make application to the Secretary of War before April 15th, 1898, for the necessary invitation, giving the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from which they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal acquaintance, from at least two reputable persons, as to his citizenship, character and habits. The candidate must be between 22 and 29 years of age, and a graduate from a Regular Medical College, as evidence of which, his diploma must be submitted to the Board. Further information regarding the examinations may be obtained by addressing the Surgeon General, U. S. Army, Geo. M. Sternberg, Washington, D. C.

Successful candidates at the coming examination will be given a course of instruction at the next session of the Army Medical School, beginning in November, 1898.

Obituary Record.

Theophilus Parvin, A. M., M. D., LL. D.,

Died at his home in Philadelphia, January 29th, 1898. He was born in Buenos Aires, South America, January 9th, 1829. He received his academic education from the University of Indiana, and graduated in medicine from the University of Pennsylvania in 1852. The honorary degree of LL. D. was conferred on him by Hanover College. During the years 1864–9, inclusive, he was a professor in the Medical College of Ohio, and in the University of Louisville from 1869–1872, inclusive. Then he was elected Professor of Obstetrics and Diseases of Women and Children in the College of Physicians and Surgeons of Indianapolis. During his residence there he was President of the Medical Society of Indiana. About 1880, he moved to Philadelphia to accept Professorship of Obstetrics in the University of Pennsylvania. A few years ago, he was elected Professor of Obstetrics and Diseases of Women and Children in the Jefferson Medical College. He was Ex-President of nearly every medical society of which he was an active member. And many State societies felt the honor of claiming him as an honorary member. He was made an Honorary Fellow of the Medical Society of Virginia in 1886. Beside attendance upon the session, he contributed a paper on autogenesis and hetorogenesis as related to puerperal sepsis, which must be ranked as one of the classic contributions to the subject of that day. No man was more esteemed by patient or doctor, and his great work on the *Science and Art of Obstetrics*, which passed through several editions, will be a lasting monument to his memory.

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Original Communications.

HOUR-GLASS CONTRACTION OF THE UTERUS.*

By ELMER SOTHORON, A. B., M. D., Washington, D. C.

The subject which I present for your consideration to-night is one which every physician, whose duty carries him in the lying-in room, should give more or less consideration. It is one of those bug-bears that will, sooner or later, make its appearance during the management of labor—sometimes very unexpectedly, when we will find ourselves ready to grasp or use any means that will right this very trying condition.

Physicians, as a general rule, have a tendency to lay aside certain complications of diseases, which do not occur daily, for future consideration. While it is true, and, at the same time, fortunate, these complications do not arise in every case of labor, yet we should always have that practical knowledge which will give us the necessary confidence to deal successfully with them.

The various causes of hour-glass contraction of the uterus have been given by a number of writers. The most common ones suggested are irration within the vagina or uterus, abuse of ergot, and abnormal adherence of the placenta. Some have thought that this irregular contraction could take place only when the placenta was attached to a side of the uterus, while others only when it adhered to the fundus. I do not believe the location of the placenta acts as a factor in these cases, but I do believe that the majority of these cases are caused by either one of the following two conditions:

First. An adherent placenta acting as an obstacle to contraction over the placental site, while the rest of the organ assumes its physiological function.

Second. The premature rupture of the membranes and the loss of the entire amount of amniotic fluid, either spontaneously or gradually, allowing the uterus to retract at a certain place, and conform itself to the surface of the fœtus. After the expulsion of the child, the retracted portion of the uterus being free, assumes its physiological duty, thereby forming this annoying central stricture. This stricture is either the internal os or some portion of the walls of the uterus.

I believe clinical evidence will bear me out, when I say that, in the majority of cases, we will find after passing this central constriction we have either a partially or a completely adherent placenta to deal with; or we find a condition entirely opposite—a free placenta held within this cavity by a powerful constriction, the location of which, in this latter class of cases, is nearly always at the internal os, or, properly speaking, the internal os itself. This condition, in my opinion, is caused by the early escape of the amniotic fluid—nature's hydraulic dilator—the duty of which we know to be a forerunner of the presenting part, not only dilating the internal as well as the external os, but also acting as a liquid distender, causing uniform contraction of the uterus, and, on mechanical principles, preventing hour-glass contraction. The mechanism of this condition is easily understood, if we recollect the strong disposition of the uterus, and especially its lower part, to contract or narrow itself, when the distending cause is removed, and while the placenta remains undelivered.

I do not believe irritation acts as a cause in these cases; if so, it is a very exceptional one. The very fact that artificial irritation of both the external and internal os is nearly always produced by the different methods of inducing premature labor, explodes such a theory, since hour-glass contraction rarely occurs in premature labor, where the early rupture of the membrane is prevented.

Meddlesome midwifery has undoubtedly a great deal to do in bringing about this condi-

*Read at a meeting of the Medical and Surgical Society of the District of Columbia, January 6, 1898.

tion, such as the early rupture of the amniotic sac, and the abuse of ergot and other drugs; but I do believe sometimes a large adherent placenta will produce this condition in spite of the accoucheur's best attention; in fact, he has no way to prevent it, as the contraction or stricture is forming while the birth of the child is engaging his attention.

Hour-glass contraction of the uterus may be known by the fundus of the same reaching higher than common, by an elastic feel of the cord and no pains attending. The placenta not being in reach of the finger, the hand is introduced, and the cord is found to pass through an aperture of greater or less size, and the placenta felt to lie within the cavity formed by this contraction.

Finding ourselves embarrassed by such a complication, the treatment should depend upon two conditions:

First. A partial or completely adherent placenta contained in a cavity whose walls are poorly contracted, thereby producing hemorrhage.

Second. A retained non-adherent placenta contained in a cavity whose walls are firmly contracted and with little or no hemorrhage.

I believe that the time for the interference of the accoucheur in the delivery of the placenta in these cases, should be regulated by the condition of the uterus itself. If we are to deal with the former class of cases, then we must act quickly; measures must be adopted to empty this upper cavity, and secure firm contractiou of the uterus in order to prevent hemorrhage. In the latter class, where there is no hemorrhage, I advocate waiting a reasonable time for nature to awaken to her duty, although my experience has taught me that this waiting, in the majority of cases, is in vain, as she refuses to do so, and there is nothing left for the accoucheur to do, but to take her place. Common sense and certain conditions, but not the minute hand of a clock, should be our guide. I am sorry to say that some physicians obey a direction but too common in text books upon this subject, that a certain period of time must elapse before any attempt be made to deliver the imprisoned placenta, not mentioning whatever the necessity for immediate action in a certain class of cases. By following such advice, we may let the proper moment pass for the successful application of a well directed force.

In this trying condition, especially in a case with more or less hemorrhage, it becomes always a matter of necessity to operate, and this should be undertaken as soon as this situation is ascertained, as I believe no advantage has ever been derived from waiting. We cannot trust the expulsion of the imprisoned placenta to nature; unfortunately, she has been overworked, or prevented from doing her duty, by being robbed of force by her prisoner. It is in vain the action of the uterus is solicited, or that any force, however well directed, be applied to the cord; nothing but the introduction of the hand, and that made to pass the stricture, can relieve the placenta from its confinement. It is to the patient always an operation of severe suffering, however well conducted, unless the stricture resists very moderately; therefore to add to it, by rudeness or maladroitness, is both cruel and dangerous. In this operation we should ever remember that in introducing our hand in the uterus, we have the expulsive force of this organ to antagonize; so in order to evercome this force and to relieve our patient of pain, I believe in the majority of these cases, the use of chloroform is justifiable. By its use we avoid resistance on the part of the patient; besides the passage of the hand through the stricture is made much easier.

The woman must be placed upon her back, thighs flexed and the knees well separated, the hand cautiously introduced into the vagina and forwarded agreeably to the direction of the cord, which should be taken always as a guide. This will be found passing through an aperture of uncertain size—sometimes larger, sometimes smaller—into which the fingers, one after the other, must be introduced and its dilation gradually effected, until the whole hand is enabled to pass the stricture. When the hand has possession of the chamber which contains the placenta, this mass must be separated carefully, if it be adherent; or if loose, it must be seized with sufficient firmness to secure its following the hand, when this is withdrawn.

Some little management is required in withdrawing the placenta, or rather in seizing it. It must not be grasped by the whole hand, kept in the uterus while contracting the fingers, or its bulk, with that of the hand, will exceed the opening through which it has to pass. This is not an unusual predicament, and has sometimes been attempted to be overcome by force, to the discomfiture of the operator and to the serious injury of the patient. During the introduction of the hand in the uterus, and especially while contending with the stricture, the uterus must be fixed firmly with the other hand, it beiug pressed upon the fundus while possession is taken of the placenta and the hand is withdrawn. After the placenta is delivered, I have thought it always best to re-enter the uterus to the very fundus, so as to be cer-

tain that neither a portion of the placenta nor coagula are left behind. Firm contraction should always follow, and if we find, after we have emptied the uterus, it has failed to do so, we should, by the use of ergot or the continuous use of pressure, force the same to do so; above all things, never leave our patient until this is accomplished. This operation is always to be slowly and cautiously performed, as the woman may be much endangered. By a contrary practice, she may, by rudeness and want of tact, be liable to uterine troubles.

Before closing, I wish to enter a protest against the common practice in dealing with these cases. Some physicians, through timidity or inexperience, attempt to dislodge a retained placenta by traction on the cord. This procedure, I am sorry to say, I have witnessed several times. It is in vain to attempt the delivery of the placenta by any exertion made upon the cord in these cases. By traction made on the cord, the whole of the uterus will sink lower in the pelvis; the physician imagines that the placenta is descending; he continues his traction under this illusion, forgetting that there is a powerful resistance at the other end. Thinking that a little more force will overcome the difficulty, he multiplies it; the cord is ruptured, and his difficulties are increased. He now becomes alarmed, the panic spreads to the patient and her family, a consultation is demanded, and another physician robs him of the little reputation he may have acquired, by the exercise of a little discretion.

1917 *I Street, N. W.*

THE AMERICAN NAVAL MEDICAL SERVICE.

By FREDERICK HORNER, M. D., Marshall, Va.,
Passed Assistant Surgeon (Retired) U. S. N.

When the several States were colonies of Great Britain as early as 1775, the Convention of the Colony of Virginia organized a committee of safety to procure armed vessels for the defence of the colony, and the control and management were entrusted to the committee. The commissioners consisted of Thomas Whiting, John Hutchins, Champion Travis, Thomas Newton, and George Webb, who first met in Williamsburg, then the Capitol of Virginia. After the commissioners organized, a plan was agreed upon for the creation of a navy consisting of seventy vessels which had been employed for purposes of commerce; these were put in commission and continued in service during the Revolutionary War. They were built at the Chickahominy Navy-yard, near Norfolk, Va., and manned by the sturdy seaman and officers of the merchant marine—that had knowledge of the sea and were characterized by the pluck and daring, which has ever distinguished this class of American citizens—both of Virginia and of the New England States. The colonists of Virginia thus decided to be prepared by sea, as well as by land, to cope with the enemy who were seeking to wrest from them their liberties, ever sacred to all of Anglo-Saxon ancestry.

In connection with the early history of the American Navy thus developed into a distinct arm of national defence, it is interesting to recall the fact that in May, 1776, the House of Burgesses of Virginia foreseeing the coming struggle for Independence, and recognizing that the shipping of James river and the border harbors of Chesapeake bay would be exposed, accepted the plan of the commissioners and were prompt to commission the various grades of officers required for command. Among the Naval Surgeons appointed were Drs. Balfour, an eminent physician of Norfolk, Va.; Kemp, Lyon, McClurg, Brockenborough, Christie, Riddle, Reynolds, Sharpless, Swope, and Pell. Thus Dr. Balfour, as first on the list appointed, may be esteemed the First Surgeon-General of our infant navy.*

At this period, the merchant marine rarely numbered among its officers a surgeon on board, and the few that were equal to the care of the sick and wounded found it more profitable to practice on land, receiving as they were wont in colonial times their medical education at the Universities of Edinburg and of London, until the Universities of Pennsylvania and of Virginia were founded.

Among the medical alumni of the University of Virginia, who have entered the U. S. Navy since its foundation in 1825, as shown by the Semi-Centennial Catalogue of Students, with brief biographical sketches prepared by Prof. Schele de Vere, LL. D., the following may be mentioned:

1. Wm. A. W. Spottswood, Session 1825, Surgeon U. S. N. Died at Pensacola Navy-yard, Fla.

2. Richard W. Jeffrey, Session 1833, Surgeon U. S. N.

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*References.

"The Virginia Navy of the Revolution," by Dr. Wm. P. Palmer, Secretary of the Virginia Historical Society, and published in the *Southern Literary Messenger*, 1857.

Campbell's *History of Virginia.*

Also, Cooper's *History of the American Navy.*

3. R. W. Leecock, Session 1833, Surgeon U. S. N.
4. John Thornley, Session 1835, Medical Director U. S. N.
5. Robt. Banister, Session 1835, Assistant Surgeon U. S. N.
6. Elisha Kent Kane, Session 1838, Surgeon U. S. N. and Arctic Explorer.
7. Charles Erersfield, Session 1840, Surgeon U. S. N.
8. William S. Stoakley, Session 1848, Surgeon U. S. N.
9. Frederick Horner, Session 1849, P. A. Surgeon U. S. N.
10. James Harrison, Session 1849, P. A. Surgeon U. S. N.
11. Paul Carrington, Session 1849, P. A. Surgeon U. S. N.
12. M. P. Christian, Session 1854, P. A. Surgeon U. S. N.
13. Bennett W. Green, Session 1854, P. A. Surgeon U. S. N.
14. Stephen A. McCreery, Session 1855, P. A. Surgeon U. S. N.

According to the list of the Navy Register, January 1, 1898, the following is the list of naval medical officers appointed from Virginia, viz:

Medical Inspector—Charles W. Gravett.

Surgeons—Cumberland G. Herndon, Edward H. Green, Millard H. Crawford, Geo. P. Lumsden, Emlyn H. Marsteller, Arthur G. Cabell, Henry T. Percy, James D. Gatewood, Henry B. Fitts.

P. A. Surgeons, 8.

Assistant Surgeons, 3.

P. A. Surgeons retired, 1.

The late Dr. Harris, Sr., held the position of Chief of the Bureau of Medicine and Surgery —this title being at present Surgeon-General, U. S. Navy.

The Annual Report, U. S. Navy, now quite voluminous, presents most valuable statistics of the health of the Navy-yard Marine Corps, based on medical and surgical data furnished by surgeons of the various squadrons on the North Atlantic, Pacific, Asiatic, European and South Atlantic stations, and the navy-yards and shore stations at Washington, D. C., Portsmouth, N. H., Boston, Mass., Newport, R. I., New London, Conn, New York, N. Y., Philadelphia, Pa., and Norfolk, Va., and the various U. S. N. Hospitals, one of which is located at Yokohama, Japan.

A Naval Museum of Hygiene, founded mainly through the labors of the late Surgeon-General, J. Miles Browne, and Medical Director Philip S. Wales, and located in Washington city, has proved eminently useful in developing all that is valuable in the sphere of naval mechanical art and in the collection of a Naval Medical Library illustrative of microscopic and bacteriologic investigations. In connection with its work for some years was a flourishing Naval Medical Society composed of surgeons on the active list and a few retired surgeons glad to exchange greetings with old friends. Interesting medical and surgical papers were read, discussed, and the proceedings were published under the supervision of the present Surgeon-General of the Navy, Wm. K. Van-Reypen, and Surgeons Wales and Beyer.

In 1893, Surgeon-General Tryon suggested a plan for the establishment of a Naval Medical School for Naval Surgeons at New York, and secured the detail of Passed Assistant Surgeon D. M. Guiteras to duty as assistant to the Director-in-charge of the Naval Laboratory, and also as instructor in the new school. The corps of instructors, in addition to Dr. Guiteras, will include the naval surgeons who are members of the Examining Board at New York. All praise is due to Ex-Surgeon-General Tryon for his movement, since the junior medical officers of the U. S. Navy have to incur the heavy expense of one or more thousand dollars to win the diploma of M. D. at the universities, and then more outlay to be prepared for the technical examination to enter and to retain a position in the navy, while the ensigns and cadets of the Naval Academy at Annapolis are subsisted and educated at a cos. of $500 per annum at the expense of the Government.

Such injustice to the Naval Medical Corps is in contrast with the liberality and justice of the Governments of Great Britain and France, which have founded naval medical schools at Portsmouth, Eng., and at Marseilles, France, where special accommodations and subsistence are provided for junior naval surgeons to prepare for promotion under the patronage of the Admiralty.

Another stride towards the advancement of efficiency in our navy is Secretary Long's proposed Naval Hospital Corps, to consist of twenty pharmacists, sixty-five hospital stewards, thirty first-class hospital apprentices, and sixty hospital apprentices, to be employed at the various naval hospitals, navy yards, and on board the flagships.

In proof of the fact that naval surgeons have contributed to medical and surgical literature, valuable data may be mentioned. A neat volume of medical essays, published by order of the Navy Department; report of Surgeon R. C. Dean, Medical Inspector U. S. N.,

on the "Naval Medical Schools of France and England;" report by Surgeon J. D. Gatewood, U. S. N., on "Hospital Statistics of the Naval Hospitals of Europe." Among book publications are "Endemic Influence of Evil Government and Medical Statistics," by Surgeon J. M. Foltz; "Medical Topography of Brazil;" "Medical Statistics during a Cruise to the Mediterranean," and "Naval Surgery"—the latter the first American production of the kind—by Medical Director G. R. B. Horner; "Arctic Explorations," 1853–55, by Elisha K. Kane; "Naval Hygiene," by Surgeon Wilson, and "Mechanical Surgery," by Surgeon P. S. Wales, and other valuable journal and magazine medical publications.

Prof. Paul B. Barringer, in his Address at the University of Virginia, says: "The records of this institution show that from 1827, when the Medical Department was established, and up to 1880, there were of the 3,000 matriculates, and of the 616 medical graduates, 60 entered the U. S. Army and Navy; from 1880 to 1885, 35 of the 180 graduates; 16 of the 57 passed the Naval Medical Examining Board; the proportion being about 9 to 20 per cent., though the standard of requirement before the Naval Examining Board has increased *pari passu* with that for graduation at the University."

The readers of this article—undertaken for the encouragement of the medical alumni of universities and colleges of the Southern States to enter the U. S. Navy—will be further interested by one published by Surgeon Edward H. Green, U. S. N., in the columns of the *Alumni Bulletin* of the University of Virginia.

Surgeon Elisha Kent Kane, who disclosed the existence of Washington land and an open polar sea in a latitude near the pole, and while commanding in person the vessel in which he and his brave comrades sailed, and Surgeon J. M. Ambler, who died from cold and starvation on the banks of the Lena river, rather than to accept the chance of escape from death offered him by the gallant Capt. De Long, may be esteemed the honor men of the United States Naval Medical Corps of the nineteenth century.—*Esta perpetua memoria.*

Foreign Medical Students to be Readmitted in Paris.

The decree excluding foreign students from the medical classes of the Faculty of Medicine of Paris, it is currently stated, will be withdrawn in a short while.

THE INFLUENCE OF THE MIND UPON THE BODY.*

By I. S. STONE, M. D., Washington, D. C.,

Surgeon to Columbia Hospital for Women, Washington, D. C.

This interesting subject affords a vast field for study, observation and discussion, with perhaps inexhaustible material at the hands of every one who essays to become thoroughly skilled in rational therapeutics. Every physician of experience knows something of the subject; yet he will, perhaps, admit that the lessons learned in this inviting field are those gleaned from experience of his own, rather than from text-books, representing the concrete experience of other minds. In short, we must admit that the study of the phenomena of mental physics, so far as its practical application is concerned, must come after much labor, and as a result of a close and intimate study of human nature. The writer wishes to do justice to the eminent psychologists and metaphysicians everywhere; yet, their methods and ideas are impracticable from the standpoint of the every-day physician.

With the above statement, and after wishing to do justice to all and denying the merits of none, let us see how easily some knowledge of the mind-cure may serve us in our daily work.

This history of mental therapeutics is full of interest, and there is quite enough of this to occupy many hours' reading. But we must not be tempted to turn aside from our resolution to speak largely from our own experience in this matter.

Physicians have long used some form of mind-cure, but often without fully understanding the method of cure. A review of the therapeutic resources of our medical ancestors would inevitably lead to the conclusion that many remedies often did but little, if any good, and possibly did harm to the confiding patients who used them. Patients then, as now, recovered in spite of the therapeutic abominations that are often administered. Laying aside the consideration of this subject for the present, we will perhaps admit that many of our patients recover through the agency of mental influence—either of the physician or some one else perhaps not skilled in the healing art. A large number of nervo-sanguine patients are constantly seen by the family physician, who may take real or pretended drugs with equally good effect These people constitute a very

*Read at a meeting of the Medical and Surgical Society of the District of Columbia, January 6, 1898.

large class in every community. Their demand for treatment is at once the strength and weakness of the cause of scientific medicine *versus* charlatanism. They are recognized as in need of something to quiet perhaps imaginary fears of illness, and the medical quack finds scores of easy victims who call him blessed, if he caters to their fancy and imagination in the application of his peculiar methods—whether his treatment consists in the administration of a homeopathic globule, or some really tangible and potent drug. My purpose is, however, not to write a dissertation on quackery, for we know the practical value of the mind-cure when practiced with rational and scientific intent, but wish to speak of certain cases showing its value.

To Charcot, perhaps more than any other modern physician, belongs the credit for having rescued the practice of mental therapeutics from the deep sea of fraud and imposition, to which it was consigned by an honest, if not a discriminating profession. The phenomena of hypnotism, so closely alied to mental therapeutics, were never placed on a practical or rational basis until this eminently wonderful man gave it the seal of his approval. Alienists and neurologists, while admittedly conversant with all the phenomena of mental therapeutics, have no monopoly of the practice, and it gives me pleasure to say that all successful physicians must practice it, and often more than they know, rely upon its potent influence for good.

It is evident that our neurotic subjects are those best adapted to the process of cure by suggestion. Many nervous women demand some application of the mind-cure in every variety of disease, just as they manifest a neurotic type of every illness. The hysterical woman can scarcely be treated or even temporarily relieved save by means of some form of mental impression. The stereotyped prescription of valerian or asafœtida, without the odor or name, would fail most lamentably. So well satisfied is your essayist of the truth of this remark, that he would scarcely expect to cure any case of grave hysteria without some application of the mind-cure.

The use of suggestion in these cases does not preclude the administration of suitable remedies addressed to existing abnormal conditions of the organs of nutrition or assimilation. Nor does it prevent us from correcting known errors of habit or other influences which may be recognized as predisposing causes of disease. We have always to ascertain and remove, if possible, all conditions of the mind which may act as exciting causes of any disease; and it is eminently true here, when dealing with such subjects as may be relieved by a resort to the mind-cure.

The following embraces the *most suitable cases for the use of the mind cure:*

Hysteria in all of its forms.
Functional neuroses.
Any form of mimicry neurosis.
Certain forms of melancholia.
Habit cases.

We will usually find such cases to have either a neurotic or a mental type. The author's method does not necessitate a resort to hypnotism, for he has rarely found his cases have need for the induction of sleep. He relies upon suggestion very largely, but for many reasons prefers to leave the use of hypnotism to others. Neither does he resort to any questionable practices. It is also thought best not to permit this practice to be called "faith cure" or "Christian science." The physician should inspire confidence, through his ability to master every situation, but should rarely, if ever, ask for implicit faith. Let the patient have all possible faith or confidence, yet without the suggestion that this is a prerequisite to success.

Case I—Miss ———, aged 16 years, was brought under my care in 1897, with the following history: At eleven years of age she was a very stout, healthy girl. Soon after this she grew nervous, lost many pounds in weight, and had symptoms of "spinal disease." Her menses appeared at the age of thirteen, and were accompanied by severe dysmenorrhœa and markd neurasthenia. For many months previous to coming under my care she had suffered from prolonged attacks of hiccough, lasting during all the day and only ceasing while asleep. For some weeks prior to her visit she had ceased the hiccough and had spasmodic jerking of the abdominal muscles. These movements of the abdominal muscles were so violent as to shake her entire body, and almost prevent articulation. For some months her physicians had treated the hiccough and gastric symptoms by lavage. The pronounced gastralgia and occasional vomiting seemed to indicate this course. Her back and larger joints appeared to have lost their normal strength and mobility; hence she was given various forms of splints and other supports to sustain her weight and to enable her to walk. It is scarcely necessary to say that these appliances were all doomed to fail of their object. But the most important part of the story is yet to be told. She was subjected to a pelvic examination, and her ovaries were found enlarged and her uterus retroflexed. An operation was sug-

gested and accepted. This child was very nearly made the unnecessary victim of an oöphorectomy. She escaped only by the merest accident.

When this interesting patient was brought to me, her condition was indeed forlorn; she seemed to be almost beyond the reach of doctors or other help. I found her ovaries somewhat enlarged, but did not think either the displacement of her uterus or the cystic ovaries had much to do with her condition. She was suffering from the effects of prolonged confinement in bed, besides neurasthenia and spinal irritation. She had rather excessive knee-jerk, although her larger joints were partially anchylosed from long-continued disuse She was somewhat anæmic, although her blood was deficient in hematin rather than in red corpuscles. All of the other organs were in normal condition. She had the most pronounced one sided blushing; her left temple, cheeks, and neck, would become suffused with the deepest crimson upon the slightest pretext.

As this girl was brought to me after at least two operators had decided to operate, your essayist must have good reasons for any conclusion he might reach, and accordingly he sought eminent counsel. The Congress of American Physicians and Surgeons was in session here at the time, and several of my friends, distinguished for their ability in their profession, favored me by calling at my hospital to see this interesting case. I regret to say that nothing but confusion resulted from this many-sided consultation. A division of opinion prevailed in reference to the cause of the trouble and the possibility of oöphorectomy affording any relief. However, it was my determination not to perform the operation without a trial of other measures.

Accordingly, a mock operation was performed under anæsthesia. The skin between the umbilicus and pubis was incised, a dressing applied, and the patient given to understand that she must stop the jerking to prevent tearing the wound open. At the same time, her uterus was replaced and a pessary inserted.

While she was under ether, all of the joints were thoroughly exercised, and afterward were treated by massage. By means of careful and well directed exercise of authority, or, in other words, by proper moral management of this case, she was able to walk ten days after the so-called operation. She has made a good recovery, and will some day marry and have children probably, which she could not have hoped for if her ovaries had been removed. This patient had a quick recovery, went to her home in a month, and has since paid me a visit and appears to be well.

Nearly all of such patients are victims of many psychical disturbances. Each case will be found interesting, and must be studied carefully. We must never be satisfied to say, "Your disease is imaginary." This error is often fatal to success. These people are often sick, and are unable to obey the command, "Rise up and walk." The most striking defect is lack of will power. There seems to be a real paralysis of the will in some cases. The desire to recover is almost or entirely lost. We must first test the patient's ability to comply with our demands. There may be real and not fancied loss of power. Our treatment will fail if we do not correctly estimate the real desire to recover. Does she prefer to remain in bed, to be nursed and perhaps petted and spoiled? Or does she find in your presence and influence something she recognizes as superior to her own will, or perhaps her clever and astute conceit? Many of these invalids are exceedingly clever. They deceive themselves and others. The physician, at times, is in despair at the frequent and exacting demands upon his resources, which are taxed to the utmost if he succeeds in overcoming the foibles of these chronic invalids.

Treatment.

To enumerate the various methods of treatment by the mind-cure is impossible within the scope of the present paper.

In the beginning, let us remember there is no need of any clap-trap or nonsensical or undignified practices. We must leave the "faith-cure" and so called "Christian scientist" to assume to do more than we could honestly promise to perform. Our aim should be to proceed cautiously, and be very sure of our ability to cure, before we promise the patient too much. The administration of tonics or any drugs will as a rule prove useless; and, indeed, in all chronic cases, have had a prolonged trial. This is quite as true of the antispasmodics as of the so called tonics. Many of the most perplexing of these cases have contracted the drug habit, of which the morphia habit is the worst. If the morphia habit has been acquired, I can most heartily endorse the statement of Dr. Weir Mitchell, who says he would not undertake to cure a case of morphia addiction without "massage." While my experience has not been as large as that of many men, yet there is no doubt about this agent being of the greatest importance as an adjuvant in the treatment of the class of cases under consideration.

As nearly all of these poor sufferers are the victims of one or perhaps many delusions, our first duty should be to study how to minimize the evil effect of the delusion rather than make a prolonged attempt to change the patient's opinion by any process of reasoning. They are not willing to be convinced and besides have very strong and resolute, if erratic opinions.

The whole plan of treatment may be summarized thus: First, obtain a dominant influence over the patient, and then indicate the entire course of her life, at least while under treatment. *The physician's will,* and not that of the patient, must be supreme. This is a good rule in any event, or under any circumstances, for it is impossible to practice the mind-cure without it, and the writer considers it the most important of all influences at our command.

A definite amount of exercise, or a duty to perform at a certain hour each day, with unvarying and unrelenting persistence, will often make a patient walk in a few weeks who had not stood alone for years. These invalids ought to be cured if they have no organic disease. It is of course useless to make any rash claims for the mind-cure, and I would consider it worse than useless to attempt what is evidently illogical and impossible.

THE INFLAMMATORY DISEASES OF THE HAND.*

By LEVI OLD, B. A., M. D., Norfolk, Va.

The few remarks here presented will have special reference to the pathology of the inflamed tissues of the hand as modified by the anatomy of the part, and thus having decided bearing on the treatment. But merely referring to those cutaneous or more superficial inflammatory diseases of the hand, as dematitis, burns, run-rounds, and so forth, I shall include only those affecting the deeper structures. And I suggest a classification for these affections, basing the classification on the condition of the cases as they actually are when seen by the surgeon—(1) *Abscess of Finger*, and (2) *Cellulitis of Hand.*

At the very commencement, of course, each case is a tendo-vaginitis, a synovitis, a periostitis or an ostitis, as the case may be, but we rarely see them so early—not till the inflammation has extended to the adjacent tissues—and if we did, I know no symptom that would always serve us to differentiate; pain, the most prominent symptom, certainly would not.

The cause of these inflammatory diseases of the hand cannot always be found, but usually the patient remembers having hurt the hand in some way. Any infected wound of the hand would cause it—as, punctured wounds, bruises, bites, pistol-shot wounds, dissecting wounds, and so-forth. But most of the cases coming to the clinics here give a history of having stuck a hook or a splinter into the hand, or having cut the finger with an oyster shell.

Cellulitis of the Hand.

You remember the anatomy of the hand, that lying between the bones and the skin there are a number of tendons, with their sheaths, bloodvessels, nerves and lymphatics, held together by connective tissue, and a strong fascia covering them over. These, beginning in the fingers, extend along the hand under the annular ligaments over the wrist, and are continued into the structures of the forearm. It is known that any inflammation is much modified by the structure and anatomical arrangement of the part invaded; so that when an infected wound of the hand appears it is quickly followed by an inflammation, which shows no tendency to localize into an abscess variety, but rapidly spreads along the connective tissue, the fascia, and tendon sheaths up under the annular ligament to the structures in the arm. As elsewhere, infection also follows the lymphatics, as evidenced by enlarged glands in the elbow and axilla. Thus we find the suppurating channels along the course of the tendons; and spreading, soon the muscles and tendons themselves are broken down, and we see that boggy mass of pus, with the usual constitutional septic symptoms.

It is usually stated that the spreading tendency of these cases of cellulitis is due to the fact that it is a streptococcus infection rather than a staphylococcus infection. My opinion is, that it is determined more by the anatomical arrangement of the structures than by the form of bacteria found present. I have never seen a case examined where both these forms of bacteria were not found.

To treat these cases is no minor operation. In every case the patient should be given a general anæsthetic; apply tourniquet around the arm; antiseptic preparation. Make long incisions, and plenty of them. The incisions are made over the lines of the bones in the direction of their long axis, thus avoiding the cutting of the remaining tendons and bloodvessels. In following the channels of pus with the

* Read before the Norfolk [Va.] Medical Society, December 2, 1897.

probe and in curetting, it is very important to use the instruments with a great deal of care as we feel up under the annular ligament toward the wrist, for if we injure the structure there we may easily cause the infection to spread that way onto the arm. If necessary, there is no harm in opening up, by a long incision, the entire annular ligament. Free drainage should be established between these openings, and often it is wise to make counter-openings for the purpose of free drainage. Wash out with a bichloride solution, 1-2000. The only vessels that will ever have to be tied are the two ends of the palmar arch. Pack with iodoform gauze; that gives good drainage and checks the hemorrhage. When it is necessary to establish drainage through, from one side of the hand to the other, a rubber drainage tube is better than the gauze. Apply a large, wet dressing. Gauze wet in sterilized water is the best. Use a splint extending to the elbow. Rest in bed, with the hand extended and resting on a pillow. After this treatment the temperature should drop, and all the septic symptoms disappear. Dress the hand with the wet dressing once a day. After operating on these cases, before renewing the wet dressing each morning, it is well to give the part a half hour's warm bath. This can be done by taking off the outside dressing and immersing the hand in a vessel of warm bichloride solution, 1-2000, and removing the packing while in the bath. The effect of this bath is to give nerve-tone and increased blood supply to the part, in addition to its germicidal action.

I believe it is impossible to operate on these cases too soon. There is pus there, you may be sure, and when a patient comes to the office it is not wise to wait, even till the next morning.

Abscess of the Finger.

Under this name I would include all those inflammatory conditions of the end of the finger as seen. A patient comes with the end of the finger tensely swollen, and complains of great pain. It is not possible to know whether the bone or the periosteum, or what definite tissue is involved. The superficial tissues only may be involved, or, may be, the periosteum, or, may be, the bone. The appearance is the same, and the difference in the intensity of the throbbing pain is no guide; so I would discard such names as felon, bone-felon, whitlow, paranychia, and call all such cases *abscesses of the finger*. Either of its tissues may have been inflamed primarily, but as we see them it has spread through the adjacent structures, and is an abscess. And only after an incision is made, and the probe introduced, can we tell whether the bone is diseased or not.

An early incision is the rule *for treatment* in every case. Though the case is seen when there is no visible sign of pus, do not delay by trying any of the so-called abortive treatments, but open it at once. The pain is thus very soon relieved, and possibly a finger saved. Antiseptic preparations; ligature round the bone of the finger; cocainize. A longitudinal incision along the middle of the palmar aspect of the finger, dissecting down till pus is reached. Examine for diseased bone, and remove if found. Wash with an antiseptic solution—bichloride solution, 1-2000. Wet dressing of gauze, soaked in sterilized water. Rest the hand on a splint, and carry in a sling. Change the dressing once a day.

Possible dangers from neglected cases.—If the bone is not primarily involved, it very soon will be, and one, may be more, joints of the finger will be lost. Then, too, the abscess shows a marked tendency to extend along the tendon sheaths into the hand, causing cellulitis of the hand and its results. The latter is especially so in case of the thumb and little finger, the tendon sheaths of these two fingers being continuous with that sheath covering the mass of tendons in the palm of the hand, and passing under the anterior annular ligament. The last neglected case I saw was one in which the patient lost the end of the thumb, and two incisions had to be made to save the little finger.

The most of these inflammatory conditions of the hand occur among the laboring people, and a great number among the poor who present themselves at the clinics. To these the loss of a thumb or a hand means a great deal. I have seen these inflammatory conditions in all stages, about—from the painful finger, relieved by an incision and two dressings, perhaps, to the infected patient with a hand useless, all swollen with pus and discharging from many small pits, which required several weeks of treatment; then, possibly, just escaping with his hand very much stiffened, and, perhaps, having lost several fingers. Every case, I think, could be called an abscess of the finger or a cellulitis of the hand. The early incision, and the wet dressing of sterilized water, are important in the treatment.

A COMPARATIVE STUDY OF PELVIC DIAMETERS OF MOTHER, WITH DIAMETERS AND CIRCUMFERENCES OF CHILD'S HEAD AT BIRTH, IN THIRTY-TWO CONSECUTIVE CASES.

By THOMAS R. MARSHALL, M. D., Richmond, Virginia,

Professor of Oral Surgery, Special Anatomy of the Head, and Adjunct Professor of General and Regional Anatomy, at the Medical College of Virginia.

The question often arises to the thoughtful accoucheur—Has the size of the mother's pelvis anything to do with the size of the child's head? Is there a proportionate relation?

If there is a roomy pelvis, will the child's head be correspondingly large—and *vice versa?*

The following tabulated measurements, taken by the writer while in service at the Maryland Lying-in Asylum, Baltimore, may be of interest:

	Mother.			Child.							
	Distances in Inches			*Diameters.*				*Circumferences.*			
Number of Case.	Between Ant. Sup. Iliac Spines.	Between Iliac Crests.	Antero-Post. Diameter.	Occipito-Frontal.	Occipito Mental.	Sub-occipito Bregmatic.	Bi-parietal.	Occipito-Frontal.	Occipito Mental.	Sub-occipito Bregmatic.	Bi-parietal.
1.....	9	10½	8	4½	5½	4⅛	3¾	13½	15	12	13½
2.....	9	11	7½	4½	4¾	3¾	3⅜	13	13½	11½	11
3.....	9¾	10¼	8¼	4¾	5	3⅝	4	12½	13	11½	13
4.....	10	10¾	7½	4½	5½	4	3½	13	14½	11½	13
5.....	9	10½	7¼	4½	5⅛	3¾	3¾	13	15	12½	13
6.....	9½	11	7¾	4⅝	5⅜	3¾	3⅝	13½	15½	12	12
7.....	9½	10½	7½	4⅜	5⅛	3¼	3¼	13	15	12	12
8.....	9	11	8¼	4⅝	5½	3⅞	3⅝	13	15	11½	12½
9.....	9	10¼	7¾	4⅜	5½	3⅞	3¾	13½	15	12½	12½
10.....	9½	10½	7¾	4⅝	5½	3¾	3½	13½	15	11½	12
11.....	8	10¾	7½	4½	5⅛	3¾	3½	13	15	11½	12
12.....	9¾	11½	8	4¾	5½	4	3⅝	13½	15	12	13½
13.....	12	11½	8	5¼	5¾	3⅛	3¾	14½	16	12½	14
14.....	9½	12½	8	4⅜	5½	3⅞	3¾	13	15	11	12½
15.....	9¼	11	7¾	4¾	5⅜	3¾	3½	13½	12	13½	12½
16.....	9¼	11½	7¾	4¼	5	3	3½	12½	13	9½	11½
17.....	8¾	10	7¾	5	6	3⅜	3⅞	15½	17	13½	15
18.....	9½	10¾	8¾	4⅞	5¾	3¾	3⅝	14	15	11½	13
19.....	10¼	11¼	7½	4⅜	5⅛	3⅝	3⅜	13	14½	11½	11
20	9½	11	7¾	4¾	5⅞	3¾	3⅝	14	16	12	12½
21.....	9½	10½	7½	4½	5½	3¾	3½	13½	15½	12	13
22.....	9¼	10¼	8	4½	5⅝	3¾	3¾	13½	15	12	13
23.....	9	10	8	4¾	5½	3½	3¾	14	16	12	13
24.....	10½	12	8	4	4½	3½	3¼	12	12¼	10½	10½
25.....	9	10½	8	4½	5¼	3¾	3½	13½	15	12	12½
26.....	9½	10¾	8¼	4⅜	5¼	3⅝	3¼	13	14½	11¼	11½
27.....	9	9½	7¾	4½	5½	3½	3½	13	15	11	13
28.....	9¼	11	7¾	4½	5	3¼	3½	13½	12	13½	12
29.....	9½	10½	7½	4½	6	4⅛	3⅝	13	15½	12½	13
30.....	9	10	7½	4½	5½	3¼	3½	13½	15½	11½	13
31.....	10	11½	7¾	4½	5	3½	3½	12½	13	12½	11
32.....	9	10½	7½	4⅝	5⅛	3⅝	3¾	13	14½	11¼	11
Ave., inches,	9.4375	10.7812+	7.7501+	4.5625+	5.3437+	3.6250	3.5937+	13.3125	14.6594	11.8437	12.5937+

In explanation of some items of the tabulated statements, it may be well to remark:

1. The children referred to were all born at about full term.

2. The antero-posterior diameters of the pelvis refer to the *external conjugate, superior strait.* To arrive at measurements for the *true conjugate,* my rule was to subtract three inches even from the measurements of the external conjugate.

3. The measurements of the *mother's pelvis* were all taken with the pelvimeter. Measurements relating to the *child's head* were taken with both the pelvimeter and tape-line—the pelvimeter for the diameters; the tape-line for the circumferences.

218 *East Franklin Street.*

Correspondence.

U. S. MARINE HOSPITAL SERVICE AND YELLOW FEVER EPIDEMICS.*

Reply to Dr. Warren E. Anderson's "Earnest Protest."

By H. R. CARTER, M. D., Surgeon U. S. M. Hospital Service.

Mobile, Ala., January 10, 1898.

Dear Sir:—I have just seen your letter. without date, to Hon. Frank S. Gardner, and am willing to believe that you will be glad to have any errors of fact therein pointed out.

In doing this I will be at pains to state as facts only such things as I have personal knowledge of, and to give my authority where I have not such personal knowledge.

1. Your first charge against the United States Marine Hospital Service is true—only young men from twenty-one to thirty (not twenty eight) are examined for admission to the Service, and on admission a very small proportion (if any) have had useful experience with epidemic diseases. That such a man, however, has ever been "sent to preside over the health destiny of New Orleans," or any other place, or is ever likely to be so sent, is untrue. These men in process of time grow older and acquire experience under older and experienced men, and not until they have that experience has any one ever been placed "in charge" of epidemic work. This I know; besides, it is a matter of record which you can easily prove

I judge, too, from this paragraph, that you think that the Marine Hospital Service is limited to its own regular officers, or at least does not avail itself of the talent and experience of other physicians in epidemic and other work. The contrary is the case, and I do not think that the employment of Porter, of Key West, in Jacksonville, 1888; of Wall, of Tampa; Faget, of New Orleans; DeSaussure, of Charleston; Booth, of Shreveport, beside a number of other physicians from other cities, and from Brunswick during the Brunswick fever, quite justifies the statement that the representatives of the Service "know nothing of the prevailing diseases" of the South. Whether this was true of the regular officers in responsible positions during the same epidemic—Murray, Hutton, John Guiteras, Geddings and myself—I leave to yourself. If ignorant, it was not from lack of experience.

So far as the commercial interests of Brunswick were concerned, the Brunswick shippers expressed themselves as well satisfied with the way they were consulted, as did the inland transportation companies. The Brunswick epidemic was almost "in toto" under the charge of this Service.

The transportation companies and the merchants of New Orleans expressed themselves the same way this year about so much of the quarantine as was under the United States control or influence. Indeed, nearly all, or all, the relief the commerce of that place obtained, was directly or indirectly through the Marine Hospital Service. Of Mobile, I have no personal knowledge.

2. Your second objection is also true. The candidates for admission are taken indiscriminately from all portions of the Union. This defect in a United States regular service is, I fear, irremediable. A Florida man has no better chance of entering than a New Yorker; a Massachusetts man than an Alabamian. The same defect, you will note, exists in the organization of the United States army and navy, which, as well as the United States Treasury, is charged with the protection of Southern as well as Northern ports.

In your distribution of officers by geographical sections you are in error, and I am at a loss to know where you got your data. I do not consider the State in which an American is born of special importance in qualifying him for United States Sanitary Service, but since you raise the point allow me to give the correct ratios, counting all in the service—Surgeon General and all.

Twenty seven per cent. were born and raised south of latitude 37 degrees—not less than 5 per cent., as you assert; 53 per cent. are of Southern birth and raising. I have not included Robert D. Murray in the above, nor men like Magruder or myself in the first, and

*Dr. Anderson,s "Protest" was published in the issue of this journal for December 24, 1897. In our issue for February 11, 1898, we admitted a reply from Dr. Hugh S. Cumming, Assistant Surgeon U. S. Marine Hosp. Serv, whom we know personally and well as one of the most cautious writers and clever doctors in the Service. Having also admitted the accompanying letter from Surgeon Carter, we will let it close the discussion—unless, of course, there are errors in one or the other of the several communications to be corrected. We confess that our own opinion of the merits of the question at issue have undergone a radical change since Dr. Anderson's "Protest" was published. We had presumed, in so vital a discussion, relating to the health of the entire South, that Dr. Anderson had carefully studied out each detailed statement, and would be prepared to sustain every assertion, which biased our own expression. Such a discussion should never be colored by sectionalism. It is only when discrimination appears against a section that we join the protest.—Editor.

yet the affiliations of almost a lifetime would class us (and others) as "far Southerners." The South, then, is fairly represented in this corps, and, indeed, since 1879 it has furnished 66 per cent. of the men now in, 34 per cent. of whom are from south of your "latitude, 37 degrees." Eighteen per cent. of the whole corps have had very considerable experience with yellow fever quarantine at Southern Stations. I say "very considerable" advisedly, these men having had service at the larger refuge stations where most of the yellow fever and vessels "certainly infected" with it are treated. For instance, the last year I held Chandeleur there were four (4) arriving with fever aboard; eight others "certainly infected," *i. e.*, which had had fever in port of departure or en route.

At Tortugas 6 vessels arrived with fever (11 cases). I do not remember the number which had occurred en route—not many, however. Neither of these stations was as large as the South Atlantic refuge station. The records of the Louisiana Board for fifteen years show an average of less than 4 ($3\frac{1}{3}$ is exact) vessels per annum "certainly infected," *i. e.*, having had fever in port of departure, en route or on arrival, between May 1st and November 1st (the "quarantine season," for which the refuge stations are also calculated). This is the largest station South, and with this comparison I think I may claim that an officer serving a term at one of the larger United States refuge stations South has a "very considerable" opportunity, at least to learn yellow fever quarantine. Nine per cent. have had experience in yellow fever quarantine at stations like Cape Charles, Va., where much less work of this kind is done, and yet this station has treated more infected vessels than any under the Florida Board, save one. I have not included service at United States quarantines north of Norfolk, although yellow fever is occasionally treated in them in these statistics.

In addition a few other officers (and practically all of the foregoing) have been on epidemic (yellow fever) duty. I count up of these 12 per cent. If smallpox or cholera work be considered—and for a national service these diseases must be considered—almost the whole corps has been engaged. But you evidently consider only yellow fever; my ratios apply to that disease only.

It would seem, then, that 39 per cent. of the corps have had experience with yellow fever in the South, and not "lesss than 10 per cent.," as you state. You state that "less than 3 per cent. are regarded by sanitarians or the general public as possessing any knowledge of the disease (yellow fever) whatever" This is your opinion of an opinion, and while I believe it (your opinion) to be erroneous, yet as you give no data I do not know how to controvert it. Your State Health Officer, Dr. Porter, would, I am sure, increase the figure given in your estimate.

Have you noted that in nearly every bill introduced of late years for a national health service, the promoters have included the Marine Hospital Service in the proposed health service? This is "because," as stated in the presentation of the Girdner bill in 1894, "we wish to avail ourselves of the services of a corps already organized and experienced in quarantine methods and the sanitary control of exotic diseases; to use an efficient tool prepared to our hand."* Were there no sanitarians behind that bill? It will be noted that the Marine Hospital Service is included in a bill you favor presented to [but not endorsed by] the American Medical Association.

3. Your third charge is, with qualification, correct. All United States officials are responsible to heads of divisions, bureaus or departments in Washington. I confess, however, I do not see how it can be avoided in any United States service, or what harm it does. Similarly, State subordinates in the State. A State is not related to the United States as one foreign country to another, but as one of its component parts, and the State representatives are the United States Government, and to them are responsible the heads of all bureaus in Washington, and every United States officer anywhere else. I cannot admit that this is "Cæsarism."

4. This objection, "the inefficiency of the Marine Hospital Service," is certainly a valid one, if true. Is it true? You base your opinion, in this paper at least, on an implied statement that the late epidemic of yellow fever was introduced through Ship Island quarantine (a United States station), and that the Brunswick epidemic of 1893 through a station operated by the United States. For neither opinion do you advance any facts—simply assume both propositions. For the first, I have no personal knowledge that the fever did not come in via Ship Island; that would imply that I know where it did come in, and I do not. I do know, however, that no evidence has been adduced, or, at least, has been brought to my knowledge that it did so. From what I heard in Biloxi, Ocean Springs, Scranton and Pascagoula, I believe the communication of

*I do not pretend this is verbatim, but it is the substance, and not far from the verbiage.—H. R. C.

Ship Island and the shore was carefully guarded. I have no personal knowledge of this matter, but that was the opinion of all those health officers, municipal officers, harbor masters and pilot commissioners, most likely to know, whom I saw in these communities. This matter is under investigation by the Mississippi Board of Health, and I hope they will be able to give us such data as to determine the origin of the 1897 fevers. Until we do know something, however, assumptions that it entered via Ship Island, or Mobile or Pascagoula are gratuitous, and, I submit, not a proper basis of argument.

"About the Brunswick fever, I do know I was early on the ground—June 18," I think; stayed until all was over, and made such investigations at the time and afterwards as were possible to me.

First reported case of yellow fever in Brunswick confirmed by autopsy. The master of the *Anita Burwind* arrived at the city June 10 to 12 (I do not remember the exact date), from the quarantine station, sick with yellow fever, and stayed two days at the Ocean Hotel, as shown by the hotel register; died on the 5th or 6th day from inception of the fever, Conquest's Camp; diagnosis confirmed by autopsy by Dunwoody, Brunswick quarantine officer. Attempt was made to corral all who worked on the vessel at her loading berth, Brunswick negroes. All save one, who escaped, were reported quarantined (Dunwoody). Effort to find those who had been aboard while lying off Brunswick was futile. That any had done so was denied, and, indeed, she left this mooring too soon for her to develop infection from the captain.

Second reported case: The President of the Board of Health, Dr. Hugh Burford, stated that in July he saw a patient on the water front (I have forgotten the name), whose case puzzled him greatly. He, at the time of reporting, recognized it as yellow fever, but did not when he saw it

You may be inclined not to give due weight to this opinion, formed after the case had passed from under observation, and in general you would be right. It is only because I know Dr. Burford, his caution, his carefulness, his good judgment, that I credit it fully.

Third case: The keeper of the Brunswick quarantine station states, the mate of the Sp. bark *Felo*, from Havana in dirt ballast, was sick at quarantine. The description was like yellow fever, and he was nursed ashore. I saw the master of the *Felo*, and he confirmed the fact of this man's illness, and that he was nursed ashore. (Surgeon Murray has abundant evidence that the mate had yellow fever.)

The vessel went to Brunswick July 29th, the mate scarcely convalescent, and the cook of the vessel sickened that night at the dock with a fever, for which the master feared to call a physician (statement of master). This was, I believe, the last vessel passed by the local quarantine authority.

Assistant Surgeon John Branham went to the quarantine station the evening of July 30th, and I went down the next morning. On the 1st of August he took charge of the station for the United States. From that date—not before—is the United States responsible for the conduct of the Brunswick quarantine station.

Branham slept on the bed at quarantine on which the mate had been sick, and, to my knowledge, was exposed to no probable infection on ships while there. He developed yellow fever at quarantine—more accurately, in a yawl about a mile from the station—violent from the outset, on August 9th; was visited the next day by the Brunswick quarantine officer, and by him taken to the city to the house of his cousin, the city health officer, under, of course, mistaken diagnosis.

Branham was exceedingly ill from the first —delirious the first night, and unfit mentally to direct the disposition of himself when he was moved to the city, or he would not have been moved. This moving to the city, although no harm—and, indeed, much good came of it —was wrong, but it was in no sense an act of the M. H. S. It was done by the Brunswick sanitary officials, who had municipal authority, and municipal authority alone, for their action.

The diagnosis of yellow fever was announced on the 12th, and precautions taken by local authority against the spread of the disease. It is not necessary to detail these, but they were well planned, elaborate and well carried out. On my arrival—I was with you in Pensacola at this time—on the 14th or 15th, I took direct charge of this case, went into quarantine with the sick man, and stayed there.

Dr. John Guiteras arrived two days after me. On beginning inspection of the town, two other cases of yellow fever (Harris and Cox) were found, and in a few days a third (Brobstone), in widely separated quarters of the town, with no traceable, or even alleged connection with the Branham case or each other. The first two had been sick some days when found, and there were histories of others, as the Casey family, who carried the fever to Cardi (Dr. Murray).

The town was at this time, when Branham was sick, infected in a number of different places, with no traceable connection between them. The fever, indeed, was beginning epidemic when he was brought in.

I give all the above very briefly, but I submit enough to show that Branham did not introduce the infection into Brunswick, and was not the first case, or even the first announced case in that town. His case was analogous to the Gelpi case in New Orleans this year.

I want to say, in all fairness, that I traced no infection in Brunswick to the captain of the *Berwind*, nor, on the other hand, was any ever traced to Branham.

I would also say that while the Service, from its announcing the fever [the diagnosis was vehemently denied by a majority of the local physicians], and placing a cordon around Brunswick, was the subject of all manner of abuse, yet this charge, that the yellow fever was introduced into Brunswick by the Service, was, so far as I know, never made there, and, indeed, except once (in 1893), in a conversation with Dr. Hamilton, of this Service, and Dr. Rauch, who, on explanation, frankly admitted that it was untrue, I had never known that the charge had been made until I heard of your letter. Surely, there were lots of Brunswick people bitter against the Service, who would at any time have made the charge had there been any reasonable probability of it being considered credible.

The quarantine methods in effect at Brunswick up to August 1st, under local authority, were such as almost of necessity to introduce infection if infected vessels came to quarantine. One need not go far to see how it could be introduced. [See my report of 1893 for facts about this station.] I bitterly regret his death, but Branham's illness in Brunswick, by compelling the announcement of the fever when it did, in all probability prevented extension of the epidemic to the neighboring towns in communication with Brunswick, Waycross, Albany, Savannah, Macon, Fernandina, and not unlikely Jacksonville and Augusta.

As explaining the appointment of a non-immune—he was my own selection, and an excellent officer—to the Brunswick quarantine as liable to lead to harm, although it may not have done so, I would say that this station was not to treat vessels from infected ports; these were to be sent to Sapelo for disinfection, an inspection station, in fact, of the same class as those of Jacksonville (Mayport) and Charlotte Harbor (Punta Gorda), in your State, at neither of which does your health officer regard it necessary for the quarantine officer to be immune, nor, in my opinion, is there special risk incurred by his not being. I do not find your opinion of the inefficiency of the Service work shared by the sanitary or municipal officials in Louisiana, Alabama, Mississippi (except Dr. Haralson) or Georgia. Witness the bill lately passed, nearly unanimously, by the legislature of the last.

On three occasions the Service has essayed to help your State Board in Florida: In 1893 in investigating suspicious fevers (Murray, Magruder and I were on the detail) in Pensacola and Port Tampa; in 1894, Guiteras in Key West, and in 1896, White at Key West. Both times there was little to be done. On the first occasion, Dr. Porter expressed himself as pleased with our assistance, and, I think, did not regard it "inefficient." Dr. White states that he expressed himself the same way about that rendered in 1896. He also expressed himself to me in decidedly complimentary terms on our measures to limit the spread of the Brunswick fever. I count his expressed approval—he not being a friend of the Marine Hospital Service—as the more valuable. I think, in all honesty, that we deserved it.

I have inspected the quarantine stations—all of them—between Baltimore and Apalachicola (except Key West), and am reasonably familiar with those in the Gulf east of Texas; yet were I to say that the work done at the United States stations was all as efficient—not always as quick—as the best I saw, you would probably call me an interested party, and throw out my evidence. Yet I do say it, and it is true.

The remainder of your letter gives simply your opinion on certain matters, not the data on which those opinions are based. That I differ from you is true, but I set out to correct certain errors which I believe to exist in your statement of facts, not your opinions. However, if your opinions be, to any extent, based on these statements, I hope they may be, to some extent, modified by my attempt to give you more correct data.

Very respectfully.

The Indiana State Medical Society

Will hold its annual meeting (1898) at Lafayette, instead of Evansville, as was agreed upon until January. Evansville met with the loss by fire of its principal hotel, which cannot be rebuilt in time to serve as headquarters.

Proceedings of Societies, etc.

RICHMOND ACADEMY OF MEDICINE AND SURGERY.

Regular Meeting, February 8th, 1398, Veteran Hall, 514–516 East Broad Street. Dr. M. D. Hoge, Jr., President, in chair; Dr. Wm. H. Parker, Assistant Secretary, Reporter.

After routine business, the special order of business was *Discussion of the Report of the Committee* made during the last meeting, (see *Va. Med. Semi-Monthly*, February 11th, pages 633–642 inclusive), on the *Progress of*

Serum-Therapy in General—in Virginia Especially.

Dr. Hugh M. Taylor, while congratulating the committee on the excellence of its report, admitted a feeling of disappointment, because of its summary dismissal of the subject of the *serum treatment of sarcoma.* Since the New York Surgical Society so recently and emphatically discouraged this treatment, it was but natural that its influence should have been felt by all investigators of this subject. Fortunately, however, for Dr. Coley and his mission, another report has recently appeared, which will largely offset the adverse criticisms of the New York Surgical Society. The *British Medical Journal* for November 13th, 1897, contains a report presented to the London Medical Society November 8th, by Mr. Mausell Maullin, in which he gives in detail his experience in the treatment of nine cases of inoperable sarcoma with Coley's fluid. Of the nine cases, one died; one voluntarily discontinued treatment after two or three injections; two were still under treatment; two were improved and three were, as far as he could tell, cured. As was to be expected, every precaution was taken by Mr. Maullin to ensure a correct diagnosis in his cases treated, and the summary of his conclusions bear the stamp of moderation in expression, but positiveness in his convictions as to the potency of the treatment. Certainly any remedy which encourages us to think there is a prospect of curing with it 33⅓ per cent. of inoperable sarcomata, warrants more than a passing notice.

The comment has often been made that if Dr. Coley can present indisputable evidence of the fact that his treatment has cured one case of inoperable sarcoma, his achievement is beyond comparison; and, of course, this indisputable evidence must include all known tests—macroscopical, microscopical and clinical—available in the diagnosis of sarcoma.

As is well known, Dr. Coley claims to have cured twenty such cases. All familiar with his writings must have been impressed by the modest way in which the claims of his treatment have been presented, but equally so with the strength of his honest convictions as to its value. Mr. Maullin was unprepared to say whether the fluid (Coley's *erysipelatous toxine*) had specific action, or only accomplished good by exciting inflammation. Dr. Taylor thought, from other sources than that just mentioned, occasional encouraging reports are gathered.

Dr. Welsh, of Johns Hopkins, in a recent discussion of this subject, was willing, in view of Dr. Coley's experience, to withhold an adverse opinion as to the treatment. Whether or not the erysipelas toxine will avail against sarcoma, must, Dr. Taylor thought, at least for the present, be held *subjudice*, but he was of the opinion that we would hardly fail to be impressed with the trend of professional thought and expression along this line. Almost an army of workers are trying to find some agent which will inhibit the growth of the cancer cell or germ, by injecting into the tissues such remedial agents as arsenic, alcohol, pyoctanin, methyl violet, chelidonium, etc.; and the reports of successes are, he thought, sufficiently encouraging to induce a trial of some one of them in all cases of inoperable sarcoma or malignant tumors of any type. It is claimed that in some cases the growth of the neoplasm is arrested; in many, the suffering is diminished or its progress retarded, and the result is incident to retrograde metamorphosis through scirrhosis, sclerosis, etc.

While not able to add anything from his own experience in support of Dr. Coley's treatment, and while not sanguine that his fluid is a specific, he would not, with the evidence before him, abandon to inevitable death inoperable sarcomata. With many others, he encourages the hope that the bacteriologists will yet be equal to the task of plenishing a remedy to master this greatest of scourges.

Immunizing by streptococcus serum and the treatment of septic intoxication by an auto-antitoxin is also a subject of interest, and he anxiously awaited a further evolution of knowledge regarding it. If a janitor of a dissecting hall, a demonstrator of anatomy, or one who frequently makes post mortems, can be immunized against cadaverine, we must admit the possibility of immunization against other similar toxic agents. It is beyond the limits of our imagination to anticipate the full scope of such an influence. Acute surgical or traumatic infection is now the subject of immunizing ex-

periments. Mr. Watson Cheyne has recently advised immunization as a prophylactic measure to prevent systematic infection anticipated as a result of trauma or operative interference. In the treatment of puerperal sepsis, traumatic sepsis, or surgical sepsis, the focus of thought seems upon the use of some such agent as Marmorek's anti streptococceus toxin. Favorable reports are not infrequent, and very recently Dr. Senn, in an article on suppurative peritonitis, advises the injection of Marmorek's fluid.

In this connection, Dr. Taylor wished to express his emphatic belief in the good accruing in sepsis from lavage of the blood by means of rectal, subcutaneous, or direct introduction of saline solution. In one case of virulent puerperal sepsis, and in two cases of profound toxæmia, incident to circumscribed inflammation after abdominal operations, he had seen each of these cases recover under supportive treatment and frequent and large enemata of salt water.

The saline solution, he thought, stimulated the activity of the skin, kidneys, lungs, heart, and bowels, favored the elimination of the toxic poison, and increased systemic resistance.

Dr. Edward McGuire stated that his experience with serum-therapy was very limited. He had used *antitoxine twice in diphtheria*—in both cases with successful results. One of the cases he considered a very bad one, which recovered with some bad heart complications. He thought that it should always be used in diphtheria. He had never used the *erysipelas inoculation in cancer*, and had very little faith in it. Several years ago, about the time this subject was brought before the public, he had removed a carcinomatous breast, removing also the glands in the axilla and subclavicular region, in which a well-marked case of erysipelas developed—the only case in which he had seen this complication in ten years follow a surgical operation. He had been very much interested in the result, but learned afterwards that the disease returned in about fifteen months. He had never used *serum therapy in tuberculosis*, because he had no confidence in its value.

Dr. J. Allison Hodges commended the report of the committee for its conservatism. In discussing it briefly, he knows of no better method than to give his individual opinion as to the conclusions at which they have arrived.

First. As to the value of *serum therapy in diphtheria.* His experience with diphtheria antitoxin has been limited. He can only add a report of its use in two cases, both of which, in their speedy recovery, would seem to prove its efficacy. One of these cases was tonsillar and laryngeal in character, and the treatment was begun on the third day. Marked improvement was noticed in twelve hours after two injections of Behring's solution. The other was a case of tonsillar diphtheria, and its treatment and course was similar to the above. In neither of these cases was a confirmatory bacteriological examination made, but he has no reason to doubt clinically the nature of the disease. His observation of this disease in other physicians' practice, and in his readings upon this subject, confirm him in the opinion that the conclusion arrived at by this committee is correct, and that the value of antitoxin treatment of diphtheria is now so firmly established that a physician would be remiss in duty did he not use it, if he had the opportunity.

Second. As to the value of *serum-therapy in the treatment of tuberculosis.* Unlike many physicians, he cannot share in the belief that the treatment of tuberculosis has been solved by this class of remedies, neither is he prepared to say that they are even an aid in the treatment of cases of well established pulmonary tuberculosis. In fact, while he has been very enthusiastic over this treatment, believing that possibly a new remedy had been discovered which was to revolutionize the treatment of this dread disease, yet, after a careful summary of his own cases, and of some others that he has observed, he is now prepared to say that he does not believe that it has ever benefited a single patient with whose case he has been conversant.

More than a year ago, he reported a case to this Academy in which he had used the serum seemingly with the most beneficial results, and, flushed with the hope inspired by that case, he was enthusiastic as to results in future similar cases. After thoroughly studying this case, however, he is free to say that he thinks he has elicited a specific history, of which he was not aware when he reported the case, and which he believes was an element in its recovery, for he now believes that, instead of being a case of primary pulmonary tuberculosis, it was a case of tuberculosis resulting from syphilitic infection.

Since the report of this case he has used this treatment upon eleven other cases, and in no one of these can he truthfully say that there has been any improvement. At no time has he been so encouraged by the success of the treatment that he has been willing to relax any other means of treatment at his command, and so he is unprepared even to say positively whether the disease in any case has even been

modified by the application of serum treatment. He believes that it is now a very well established clinical fact that if a tuberculosis patient has a temperature never exceeding 99° or 100°, and is improving in weight, the tendency is towards a recovery, and he thinks that the treatment of some such cases as these, probably, by some physicians has led to an erroneous estimate of the curative value of serum therapy in this disease.

He has never yet been so impressed with its value as to discard all hygienic measures, together with vigorous methods for improving the patient's nutrition; and, consequently, he cannot report what the treatment *per se* would have accomplished. Still, logically, the results should have been that much more conspicuous, had the specific treatment been of any additional value.

Third. As to the other conclusions cited by the committee, he can only say that they are in accordance with his views.

Dr. Landon B. Edwards stated that he had not sought to impress his personal views in regard to *serum-therapy of tuberculosis* while preparing the report. He was surprised to find such meagre returns from the profession of the State on the subject. His own experience covered about 35 cases of serum-therapy in tuberculosis, and he is persuaded that it has a beneficial influence in a greater number of cases than is ordinarily attributed to it. His chief experience—in fact, almost sole experience—had been with "antitubercle serum" of Paquin. In a number of cases, the bacilli had been discovered in abundance by Drs. M. D. Hoge, H. Stuart MacLean, and others of our city. After the daily use of the serum for some weeks, the bacilli had been observed to shrivel and shrink into fibres, and then nearly disappear into what appeared lifeless spores. When the serum was begun, early after detection of bacilli, the most decided good results had been witnessed. Of the 35 or 36 cases that had been under his treatment, he can point to ten or twelve from whoes sputa bacilli have disappeared, and where the patients have all the physical signs of restored health. This is a better showing than he had when he depended alone on other plans of treatment advocated. And unless this improved result be attributable to the serum-therapy as a most valuable help to other remedies used—such as creosote, guaiacol carbonate, strychnia, etc., he does not know how to account for it. Serum therapy of tuberculosis is by no means perfected. But in adopting it, he believes that we are on the right track—although we must seek to overcome some of its present effects. Among such effects are alarming attacks of dyspnœa that sometimes immediately follow its administration. They resemble apnœa, and result in most distressing sensations in the patient. He has seen such attacks repeatedly in the same patient, and oftentimes once or twice in different patients. They are such as to make the doctor nervous as to the immediate result. But in no case has he seen permanent bad effect, nor has he ever heard of a death from such attacks. He does not know how to account for them. He looks upon antitubercle serum in tuberculosis not as the substitute for any agent thus far proven of service in tuberculosis, but as an adjuvant of undoubted value in a number of cases—especially in the early stage of the disease.

Dr. Ramon D. Garcin stated that he had overlooked replying to the circular of the committee. He, however, has had experience with *antitoxin in four cases of laryngeal diphtheria.* These cases occurred several years ago, but the results were by no means satisfactory. Such unsatisfactory results were probably due to our limited knowledge at the time as to the indications for its administration, dosage, imperfections of manufacture, period of disease, when to use it, etc. But in *two cases of diphtheria of the upper air passages,* occurring only a short while since, the use of antitoxin was very decidedly successful. In one of the cases, the bacteriological diagnosis was made by Dr. E. C. Levy.

Dr. H. H. Levy said that he has employed *diphtheria antitoxin* in fourteen cases since the spring of 1895. All recovered, and with no unpleasant sequelæ.

As regards the danger of heart-failure during the disease, alluded to by Dr. Upshur, he believes that indications of greatly depressed circulation ought to be met by the exhibition of strychnia in rather full doses, repeated at intervals of two to six hours, and the free administration of whiskey or other alcoholic stimulants.

Dr. R. B. Teusler reported two cases in which he has used *diphtheria antitoxin. The first* was that of a boy, twelve years old. The case started as scarlet fever. On the 9th day after the eruption appeared, desquamation being well established, he was surprised to find the child's fauces inflamed and the temperature 104°. In a few hours, the tonsils and *uvula were covered with membrane;* there was painful deglutition and severe pains through the limbs and back; a good deal of restlessness—the pulse full, and respiration hurried. The

urine contained albumin in small quantity. He diagnosed diphtheria, and gave 1,500 units of Parke, Davis & Co.'s antitoxine. This was about 5 o'clock in the afternoon: at 11-30 that night, there was very little change, except in the pulse, which was slower and quieter, and the temperature 102.6°. About 4 o'clock in the morning he was called, and found the patient breathing very rapidly, with some cyanosis about the face and chest. He gave 1,000 more units, and waited until about 7:30 A. M., when, the child having gone off into a quiet sleep, he thought it safe to leave. When he saw the child about 1 o'clock that day, he found the entire trunk and limbs covered with an eruption similar to that he had a few days before in the scarlet fever, but his general condition was decidedly better.

The case recovered, the eruption disappearing by lysis, with desquamation. Albumen persisted in the urine for some three weeks.

The second case was a little girl about 4 years old. When he saw her, she had all the symptoms of *severe laryngeal diphtheria;* her pulse was weak and thready; eyes glazed, and face drawn and bluish from the labored breathing. He gave 1,500 units of diphtheria antitoxin, with strychnia, nitro-glycerine, etc., for the intense depression. In three hours, the breathing was a trifle better, but otherwise the child was worse, the temperature subnormal—97.2° —no radial pulse being detectable, and extremities cold, death occurring in a few hours, no doubt due to the intense toxæmia. The membrane never showed itself above the post-pharyngeal wall.

Dr. J. N. Upshur said that in his experience the great *danger in diphtheria* was death from heart failure. In some cases, the poison seems so concentrated that it acted like the poison in a venomous snake bite. With only a little diphtheritic membrane in the throat, in some cases, the heart seemed to be overwhelmed by the virulence of the poison. He wished to know what power the antitoxin treatment had to prevent such a catastrophe as threatens in cases of the kind referred to. He wished to know, too, what effect this serum treatment had in preventing the development of paralyses of various kinds as sequelæ to the original attack.

Dr. Arthur Jordan agrees with the statement of Dr. Hodges that one of the best ways in which to discuss the committee's report is to pass in review the conclusions drawn from the tabulated cases. Another very desirable way in which to bring out important features is to make a comparison between reports on similar subjects, in which the detailed data and the sources of collected cases are as nearly alike as circumstances will permit. Before going into the minutiæ of comparison, it may not be improper to state that the statistical evidence adduced compares favorably with any prior report, if we make an exception of the mortality rate in mild cases, which will be explained at another part of the discussion. If we compare the rate of mortality in the one hundred cases of *diphtheria* [see table facing page 640 in the journal, Feb. 11, 1898,] with that derived from the report of 5,794 cases collected and tabulated by the American Pediatric Society, it will be seen that our death-rate is considerably less. The percentage of deaths, all classes of cases included, in the former report, is 12.3 per cent. As opposed to this mortality, your committee's report presents 8 per cent. If we deduct from the given number of cases (5,794), those that were moribund at the time of injection (218), the percentage of deaths is found to be 8.8 per cent. Deducting one moribund case from the Virginia statistics, we have 7 per cent.—a saving of 1.8 per cent. There can be no doubt that this reduced mortality reflects credit upon the physicians.

Using the table of the American Pediatric Society as a further basis of comparison, it is apparent that the percentage of deaths in laryngeal cases is also in favor of our report. The mortality in this class of cases in the American Pediatric Society's report is 21.12 per cent., while in the Virginia report it is but 12.50 per cent.—a difference of 8.62 per cent. It is conceded by all physicians that laryngeal diphtheria is more apt to terminate fatally than any other type. Notwithstanding this fact, the death-rate is so much less than that formerly reported in laryngeal cases that Dr. Jordan urges this Society to consider it, feeling that the time thus consumed will be well spent.

He next directed attention to Table No. IV, [see page 639, Feb. 11 issue], with the view of considering the single death reported among the mild cases. By reference to the detailed data furnished by Table No. I [Feb. 11 issue of this journal], it will be seen that the temperature, respiration and pulse-rate were increased, at the same time that improvement was noticed in the general condition of this case. After the repetition of the serum, the same conditions in the various systems were noted as after the initial injection. It is plain that a mistake has occurred in the reported information. He does not think that there could have been such a discrepancy between the temperature, respira-

tion, and circulation, on the one hand, and the general condition on the other. Furthermore, the attending physician states, in his report of the case, that the death occurred under circumstances with which he was not acquainted.

Dr. Jordan stated that he may be wrong in his final surmise, and while he draws his conclusions with all deference to the physician, he cannot help but believe that the child's death was not attributable to diphtheria. If these explained discrepancies be accepted, it will be quite proper to exclude this death from among the mild cases. If this be done, the number of deaths in this class of cases will be quite within keeping with the statement made by Behring that the mortality in mild cases will not reach 5 per cent. when the antitoxic serum is used.

It is not improbable that both timidity, on the part of the physician, and exposure of the remedy, have discouraged the use of the serum in mild cases.

The per cent. of deaths in serum cases is only .13 per cent. above that prescribed by Behring in the mild type of diphtheria.

Table VI shows the importance of administering serum in the later days of the malady, for it can never be positively stated what course the disease will take. There is no doubt that the sooner it is injected the better are the chances of stimulating the tissue-cells to withstand the paralyzing effect of the poison. But the favorable reports, as shown by this table, of its employment on and after the fifth day of the disease, is a plain indication that it ought to be used whenever the patient is seen and the physician feels sure that he has a case of diphtheria.

It must be borne in mind that in pharyngeal diphtheria we have mostly the diphtheritic bacillus as the ætiological factor, while in laryngeal diphtheria there is not only this germ at work, but not infrequently it is aided by the pus cocci and the pneumococci. When these latter organisms are found in active operation, there is a mixed infection going on in the system of the patient attacked. In this class of cases, it is necessary either to give large doses of a concentrated serum or repeated doses of a weaker one, so that the poison of diphtheria is early neutralized, thus giving the system a more favorable chance to combat the resulting pyæmia. In any disease, the severer types are to be dealt with more energetically than the less severe ones; and inasmuch as no one will deny that laryngeal diphtheria is a much more dangerous and severe disease than the pharyngeal type, hence the importance of larger doses of antitoxin, as suggested above.

One cannot fail to notice the absence of intubation in those cases where the indications were clearly for an aperture. Three tracheotomies are reported, but not a single instance of intubation. In performing the former operation, the necessary incision at once affords a favorable opportunity for streptococci infection, to say nothing of the bronchial disturbance which is so frequently a complication in such cases. The many advantages of intubation are so apparent that perhaps the only plausible reason for resorting to tracheotomy, instead of intubation, is to be found in the force of habit that has been established by the long employment of the former.

There can be no doubt that great experience in the administration of antitoxin can be gained by observing its influence on (1) *the temperature*, (2) *the pulse*, (3) *the respiration*, (4) *the general condition*, (5) *the albuminuria*, and by (6) ascertaining whether the case is one due to a *simple* or *mixed infection*. A careful observance of the albumin in each case will show that the serum exerts some influence in causing its disappearance.

In explanation of the immunizing property of antitoxin, referred to by Dr. J. S. Wellford, Dr. Jordan said that the substance which caused immunization was not found in the blood, nor the blood-plasma. But the blood, or its plasma, may acquire the property of producing the organic processes which render the body immune against certain poisons. These peculiar processes may bring about this desirable condition of one's system by destruction or chemical transformation of the poison, or by stimulating portions of the nervous system, which may be paralyzed by the toxins.

Dr. E. C. Levy thought it an exceedingly significant and gratifying fact that the members who had spoken were so unanimous in their agreement as to the efficacy of the serum treatment of diphtheria. Whatever might be the value of antitoxins in other diseases, its worth in diphtheria was now as well established as any fact in medicine.

One member had taken exception to the conclusion of the committee that the remedy was especially valuable in the laryngeal form of diphtheria. Dr. Levy held that this fact had been abundantly proved by the most extensive investigation. Personally, not to refer to hospital cases, he had seen, in consultation, during 1897, five cases of laryngeal diphtheria, all of which had been given antitoxin. In the first of these, the child was moribund when first seen, and would undoubtedly have died inside of an hour had not intubation been at once performed. Here it had been too late for

antitoxin or any other treatment to accomplish anything, although, after intubation, the child had lived fifteen hours. The other four cases had all recovered. Every one of these had been of a most severe type of laryngeal diphtheria (proved bacteriologically), accompanied by extreme dyspnœa, retraction, and, in two instances, by slight cyanosis. In every one of these, the patient was practically out of danger inside of thirty-six hours.

Laryngeal diphtheria, however, was always a disease demanding the utmost care, watchfulness, and discrimination, in its treatment. To rely solely upon antitoxin was not sufficient, and although certain broad lines of other treatment could be laid down, yet such cases demanded the prompt recognition of indications which might suddenly arise at any moment, and which must be immediately and energetically met.

With antitoxin and intubation, it should be a rare occurrence, indeed, for any case of laryngeal diphtheria to die of asphyxia. The great danger now in these cases was the liability to broncho-pneumonia—a complication which was, under present modes of treatment, responsible for most deaths in laryngeal diphtheria. When some method could be devised to prevent or successfully treat this complication, the mortality of laryngeal diphtheria would be markedly reduced. So far no good in this direction had been accomplished by the employment of anti streptococcus serum.

One practical point, he thought, was often overlooked—the necessity of keeping antitoxin in a cool place. Many druggists kept their supply of antitoxin within a few feet of a stove.

If physicians would refuse to purchase the remedy under such conditions, this matter would receive prompt attention.

Dr. W. B. DeGarmo, of New York,

Has the honor of claiming the largest number of *hernia operations* without a single death. Up to last September, he had done 278 Bassini operations upon patients of all ages and conditions without any dangerous symptom following in any case.

Contestants for the Senn Surgical Prize.

Notice is issued to the members of the American Medical Association who may compete for the medal offered by Dr. Nicholas Senn for the best essay on some surgical subject, that they must forward typewritten copies to the Chairman of the Prize Award Committee, Dr. J. McFadden Gaston, Atlanta, Ga.

Analyses, Selections, etc.

Carbolic Acid Prophylactic as Also Curative of Scarlet Fever.

In a recent paper in *London Lancet* by Arthur Wigglesworth, L. R. C. P., London, he remarks that "Isolation in scarlet fever is unnecessary and inexpedient." On several occasions he has called attention to the great value of carbolic acid in the treatment of scarlatina, for in his hand it has proved a specific. As a summary of his experience: If he sees his scarlatinal patients in the initial stage of the disease, they all recover. He has had only three cases of transient albuminuria; only one case of glandular suppuration; and all other usual sequelæ have been characteristically absent. All the patients have recovered in a remarkably short space of time, and with but little enfeebleness of strength.

Treatment consists in administering to all patients, as soon as scarlet fever is suspected or diagnosed, from one to six grains of carbolic acid (according to age) freely diluted with water, and continuing it every two hours until the rash has finally disappeared, and then reducing the dose and frequency of administration until convalesence is freely established. He has pursued this practice for over sixteen years, and each succeeding year has confirmed his opinion of its inestimable value.

Some years ago, two children with scarlet fever could not be isolated from the rest of the children—three in number—because the elder sister and mother were all left to attend to the wants of the household. He placed this sister and the other two upon two grain doses of carbolic acid twice a day, and the freest communication existed between the inmates of the sick chamber and the rest of the household. The result was eminently satisfactory. None of the rest took the infection, though about three years afterwards they were attacked—showing susceptibility to zymotic poison.

In subsequent cases, he has pursued this line of prophylactic treatment—giving carbolic acid to those not infected, and then allowing the freest communication between attendants in the sick room and other inmates of the household, but not allowing uninfected children to enter the sick chamber. Most of the household escaped infection altogether, although they not infrequently had attacks in after years. Those who did take scarlet fever invariably took the infection in a milder form, and in only one instance did a sequela occur.

Furthermore, after disinfection, no other cases arose unless imported from a fresh source.

When a patient has taken a certain quantity of carbolic acid, the peculiarly dark color of the urine indicates "carbolization." When this is produced, the urine remains free from the usual putrefactive changes from a week to a month, and the usual highly offensive ammoniacal odor of putrid urine is almost absent.

The plan of the writer is to first carbolize the patient with doses according to age; and, at the same time, put all the uninfected members of the household on carbolic acid; and when the characteristic hue has become manifested in the urine of the patient, introduce the other children into the sick room—allowing them free access until desquamation is completed and the house disinfected.

As to the action of carbolic acid as an "attenuator," and "bactericide," upon a given bacillus: The anthrax bacillus is one of the most resistant of bacilli to inhibitory influences. Its behavior, under the influence of carbolic acid, is of great importance, because this acid alone of all the most powerful germicides, can be given in large and repeated doses for a lengthened period of time without deleterious effect upon the system or its organs—in this respect, unlike many of the mineral and organic germicides.

Carbolic acid acts differently, however, on anthrax bacilli which have spores, and those free of them. Bacteria without spores are rapidly and completety destroyed (not attenuated merely) by a very small proportion of carbolic acid—being killed in a few minutes when from $\frac{1}{4}$ to $\frac{1}{2}$ per cent. of carbolic acid is added to the nutrient fluid; whilst from 4. to 5. per cent. of the acid is required to destroy spores, even in from 24 to 48 hours. As to the amount of carbolic acid necessary "to attenuate" this very persisting bacillus, Koch found there was a "distinct hindering" of the growth when $\frac{1}{1250}$ths acid was added to the nutrient fluid; and that complete cessation of growth occurred when the strength was increased to 1.850. It was also found that "the action of the antiseptic was to diminish the virulence of the bacterium;" and that "decreasing virulence was exhibited until an attenuated virus was produced capable of preserving animals from a fatal form of anthrax—*i. e.*, a vaccine was the resultant.

These experiments were made outside the body; but great difference was observable when the bacillus was taken direct from the blood, and then exposed to the action of the antiseptic. Thus, bacterial filaments taken from a virulent drop of blood in a case of anthrax soon perished when placed in a 1:600 solution of carbolic acid; though if a similar drop was put into the nutrient broth, and carbolic acid of the same strength added, the bacilli lived and grew therein. Normal blood serum is not a favorable soil for bacterial growth, and Lister has returned to the use of carbolic acid for disinfecting purposes.

But in comparative reasoning between the action of carbolic acid on the anthrax bacillus, and its supposed action on the bacterium which causes scarlet fever, we have to pass from the domain of fact into that of theory.

To discover what amount of carbolic acid would have to be given an anthrax patient, provided the effects were similar, so as to ascertain if there is any similarity: Of dose between what would be required in this disease and in scarlet fever—the dose being regulated —(1), to hinder growth of the bacterium; (2), to cause cessation of growth, and (3), to kill outright—the author prepared a table, based, first, upon the weight of the body. Allowing 1.13 for the average amount of blood contained therein, he calculated the approximate amount of carbolic acid that would have to be administered to produce the three separate effects described; and afterwards compared the doses with those he was in the habit of giving scarlet fever patients at varying ages.

To a child from three to five years of age, he gave thirty grains of carbolic acid in 24 hours —ten and a half grains more than required "to hinder" the growth of the anthrax bacillus, and a grain and a half more than sufficient "to stop" its growth.

In children from 8 to 10 years, averaging 4st.1lb., 26 grains carbolic acid would be the amount given in 24 hours—being $11\frac{1}{2}$ grains more than necessary to effect the first purpose on anthrax bacillus, and just sufficient for the second. Coming to the average weight of young people, 7st.4lb., the dose to scarlet fever patients would be increased to five grains, or 60 grains in 24 hours. Thus we have *plus* sixteen for the first purpose, and *minus* only $4\frac{1}{2}$ for the second. It is not until we come to 0st.13lb. that the amount given is barely sufficient to hinder growth, and $28\frac{1}{2}$ grains less than necessary to stop it altogether.

While we know nothing concerning the scarlatinal bacterium, it is ascertained that a person taking scarlet fever from a carbolized patient invariably has a milder attack.

Regulation of the Social Evil in Japan.

Dr. Albert Abrams, writing from Yokohama, Japan, gives an interesting account (*Occidental Med. Times*, Jan., 1898,) of the regulation of the social evils in Japan, and some incidental deductions relating thereto. He says:

The Yoshiwara is the principal quarter inhabited by the licensed hetairæ of Tokio. The Yoshiwara is reproduced on a smaller scale in the principal cities of Japan. The isolation of the courtesans is a remarkable attempt made to solve one of the great problems of human society. The whole quarter is under special municipal surveillance.

The Yoshiwara is seen to the best advantage at night. Here the women, gilded and painted according to Japanese cosmetic science, sit, side by side, like so many animals on exhibition, in long, narrow cages with wooden bars, which open on to the public thoroughfare. Here they sit for hours speechless and motionless and they do not obtrude their solicitations on the passer-by. This is the Japanese method of isolating vice. Nobody in Japan can unknowingly fall into temptation; he must go in search of it.

Is not this method of segregation superior to our Western methods, which permit, after night fall, the open parade of immorality upon the thoroughfares of our cities?

The isolation of the hetairæ subserves several purposes: (1) Public morals are abetted by segregation of the licensed houses (Kashi-Zashiki). (2) Medical inspection is more easily and certainly effected. (3) The tax levied on each member of the *demi-monde* is easily collected.

Prostitutes in Japan may be divided into three classes: (1) *Jigoku*, or unlicensed women, (2) *The Shogi*, or licensed prostitutes. (3) *The Geisha*, or professional singers and dancers. *The Jigoku* are the legitimate successors of the ancient night-walker, known as the *Yo-taka*.

In the 18th century, there existed in Tokio a house known as the Yo-taka-ya (the sign of the night-hawk), which women frequented, to be painted and otherwise adorned when the ravages of disease had made them unpresentable. Prostitutes whose noses had been partially destroyed by syphilis had the defect repaired by colored candle drippings, and syphilitic sores were corrected by cosmetics. Thus adorned, these unfortunates pursued their nefarious calling. Between 1711 and 1735, the number of these women became so great that they were compelled to become regular prostitutes, and as such, were handed over to the Yoshiwara by the Government. The stringency of the law against secret prostitution may be determined by the edict issued by the Governor of Tokio, in 1722 According to this edict, persons harboring secret prostitutes were compelled to give up all their worldly possessions, and were even punished with banishment or death, and the woman offending had her furniture seized, and for 100 days was manacled with irons. The penal code, promulgated in 1880, is less harsh. It provides three to ten days' incarceration, or a nominal fine, as a punishment for illicit prostitution, or in the assistance of the same. The *shogi*, or licensed prostitute, is to be found only in the recognized prostitute quarter (Yoshiwara), established by consent of the Government and properly controlled by them. The *geisha*, or singing girl, is never a prostitute theoretically, but the boundary line between the latter and herself is very ill-defined. The geisha women are an important factor in Japanese entertainments. The majority of them are adopted while quite young and trained to the life. The system of prostitution is based upon the theory of a civil contract. When a girl is forced by her parents to become a *fille de joie*, or, which is less often the case, desires of her own will to become one, the keeper of a house advances to the parents a certain sum of money. which rarely exceeds $100. The girl, her parents, and a surety, thereupon enter into a bond, for her to become an inmate of his house for three years, or until the proportion of her earnings, which goes to the keeper, is sufficient to reimburse him for the money advanced and the expenditures for clothes and board. During the time she is not permitted without a kansatsu, or local police pass, to go outside the Yoshiwara.

The houses in the Yoshiwara in Tokio number about 100, with 1,850 licensed prostitutes. Each *shogi* has her own servant and apartment. Henry Norman, in recently describing one of these apartments, says: "There is nearly always a large written and framed scroll in a conspicuous position, exhibiting some scrap of appropriate poetry, tersely told in the complicated Chinese characters. One I was shown had the four characters—"Matsu kiku noa sonsu," literally: Pine, chrysanthemums, still are—*i. e.*, the pine and the chrysanthemum always preserve their charm, even in winter when other flowers die, and, by implication, my charms are everlasting like pine and the chrysanthemum." Poetry is the essence of Japanese life. When a woman becomes a prostitute, she adopts a *nom de guerre*, by which she is known until her engagement is over.

Such names as the following are quite common in this atmosphere of pollution: "Waterfall," "Brightness of the Flower," "Little Pine," "The Jewel River," etc.

A very trustworthy statistician estimates the total of women practicing prostitution in Japan as probably over 1,400,000, and if to this again 500,000 geisha be added, the complete grand total is about 5 per cent. of the entire population, or 10 per cent. of the female population of all ages. Some are opposed to regarding the geisha as courtesans, but the Japanese recognize them as first-class prostitutes, and that their singing and dancing are merely a blind, the purchase of their favors being only a question of money.

Women of Shizoku, or noble rank, are not permitted to become prostitutes, but the regulation is frequently evaded by the woman being adopted into a commoner's family. Each courtesan must submit to an official examination once a week, and any shogi found diseased is relegated to a special hospital for the treatment of venereal diseases. This hospital is supported by the associated keepers.

No girl under 16 is allowed to become a prostitute, and the papers substantiating her age must receive the official signature of the officer of the ward in which she resides. The circumstances of each case, the names of the parents, the reasons why they give their consent. the name of the keeper, and the details of the contract, are entered in a book kept at the police department for that purpose. The women who make up the courtesan class are recruited from the children of distressed parents, or were sold by cruel relatives who wish to avoid the care and expense of bringing them up. Those entering later in life may be orphans who have no means of subsistence; there may be others who, out of filiai duty, sacrifice their bodies to assist distressed parents and others may be married women or seduced girls.

One is impelled to admit the Japanese courtesan is a diamond among the frail sisterhood of Europe and America. She is rarely vulgar, and never vicious, and her disposition has been likened by an Eastern allegorical expression to "the lotus in the mud." Confucius is quoted as having said, "Kill the body, but practice love and benevolence." The tenets of Confucianism are constantly quoted to the unfortunate and unwilling inhabitants of the Yoshiwara to justify, perhaps, the atrocious cruelty of parents. Confucius taught that filial obedience was a primal and imperative virtue, and that one may defile the body but not the heart. The present system of control exercised in Japan over the social evil is emphatically more perfect than those in vogue in Europe and America. The chasm between vice and virtue is more pronounced in Japan than perhaps anywhere else in the world, for in Japan not only is the courtesan isolated from an environment of virtue, but she is made conspicuous by her articles of attire. Her head dress consists of light tortoise shell hair pins stuck around her head like the halo of a saint, and the law compels her to wear the bow of her wide sash, called the *obi*, in front, instead of behind, as is conventional with the respectable women.

Notwithstanding the police and medical espionage of the Japanese prostitutes, the prophylaxis of syphilis is no more effective than in other countries where this control system of prostitution is in force. Dr. Stuart Eldridge, a prominent physician of Yokohama, and an accurate observer, has told the writer that few of the unmarried European residents of Yokohama escape luetic inoculation, and that clandestine prostitution, at least in the open ports, has increased, *pari paisu*, with the stringency of discipline in the regular army of Venus; that there are few parts of the world more dangerous to the unsophisticated globe trotter than fascinatiug, childlike, beautiful, glorious, dai nippon. He has observed, contrary to the current belief, that syphilis, as contracted by Europeans in Japan, as well as in China, differs in no essential particulars from that acquired by men of similar position and circumstances in Europe or America.

He has noted a remarkable fact, however, in the medical history of European residents in the Japanese ports; and this is also true in certain of the Chinese cities open to foreigners, that the proportion which thoracic and abdominal aneurism bears to cause of death is in excess of all other diseases. During the nineteen years of his private practice in Yokohama, he personally had to do with about forty cases of fatal aneurism, thoracic or abdominal, within the resident European community. The experience of other practitioners has been parallel with his own. He feels justified in concluding, from his observations, that the exciting factor in these cases of aneurism is unquestionably syphilis.

Prolapse and Retraction of Rectum at Will.

Dr. W. O. Roberts, Louisville, reports (*Amer. Prac. and News*, February 1st,) a unique case. During his clinic at the University, a man came complaining of hæmorrhoids. He was

put on his back on the table; his legs were drawn up for examination and he strained slightly; he had action from his bowel, and passed out about four inches of rectum. After examining the mass carefully to see whether or not there were any hæmorrhoidal tumors about it or a tumor of any kind, the doctor started to get some vaseline to assist in replacing the rectum, when the man drew it back himself as though he had a string fastened to it He did not touch it, but simply drew it back as if by muscular action. The table was then turned so that the class could see the again prolapsed rectum, and he shot the rectum out and drew it back four or five times. To the doctor, this appeared a very peculiar and unique condition, and he inquired if any of the members of the Louisville Medico Chirurgical Society (to which he reported the case verbally) had ever encountered a condition of the kind.

No one appeared to have seen such a case; but Dr. J. M. Williams thought the case undoubtedly one of prolapse of the rectum, with a lax condition of the connective tissue — probably as the result of the continually coming down of the rectum. Undoubtedly the bowel comes down after each defecation. There is some kind of an action by which the patient controls the rectum. It may be that contraction of the sphincter muscle starts the rectum upwards, and then it simply follows its course. Certainly if the bowel comes out four inches, there would be considerable tension upon the mesenteric attachment. It seems entirely possible that this phenomenon could be influenced and controlled by the diaphragm and abdominal muscles—and this may be the solution of this unique case.

Rupture of Uterus in Natural Abortion.

Dr. Frank S. Parsons, Dorchester, Mass., reports (*Med. Times & Reg.*, Feb'y 12, 1898,) an unparalleled case of rupture of the uterus occurring at the third month of gestation during a natural abortion. It happened in the practice of one of his colleagues: A healthy woman, age about 30, mother of three children, at about the third month of gestation, aborted from natural causes. During the previous confinement, the os uteri was torn on two sides —on one side, slightly; on the other, clear through the internal os. She and her husband were desirous of children; and there was nothing to suggest that the present abortion was occurring from other than natural causes. The fœtus was born when the doctor arrived; so that his manipulation was with intent of removing the membranes. But to his surprise he passed his finger through a rent in the uterine walls into the abdominal cavity and came in contact with the intestines. The patient seemed collapsed. She was etherized as soon as aid could be summoned, and a laparotomy done. The rent in the uterus extended from the point of the old laceration to the fundus, and was stitched. The uterine tissue was considerably soft, and friable, due probably to degenerative processes. She re-acted well from the operation without abnormal temperature or other bad symptom except a rapid pulse. On the third day, however, she gradually collapsed and died. No autopsy. Pelvis was not contracted. Indeed, if it had been, it would not have been a factor of importance at the third month of gestation in a woman who had successfully borne children. Pure muscular contraction of the softened degenerated uterine walls was undoubtedly the sole cause of the rupture in this case.

Something New for Tuberculosis.

There is a Dr. A. B. Barr, Calamine, Ark., who "holds certificate of examining board," who says (*St Louis Med. and Surg. Jour.*, Feb., 1898), "after years of study and chemical experiment," he has separated from the animal body "an animal alkaloid" entirely "different in its chemical and therapeutic action from any known chemical compound." On trial of it in tuberculosis, he has "found its action everything that could be desired." But "*as it requires chemical skill and experience*," he cannot make known the process of its manufacture. To quote the author's words: "*If made public it would probably prove disastrous.*" No doubt it would. It is very considerate in the doctor to keep it all to himself.

Haffkine's Anticholera Inoculations in India.

Dr. Andrew Davidson remarks (*Indian Lancet*, Jan. 16, 1898,) that the earlier experiments (1894) with Haffkine's anticholera vaccines in India were somewhat disappointing—the proportion of cholera deaths among the inoculated being only 2.57 per cent. less than among those not inoculated. Later experience, however, places the matter in a totally different light. Resort to stronger 'vaccines,' in larger doses, in experiments now carried out for a sufficient length of time and on a sufficiently extensive scale in those living in endemic areas as well as those exposed to epidemic forms of the disease, prove beyond doubt that 'we have in these inoculations an entirely trustworthy

means of affording a temporary protection to a community menaced by a cholera outbreak, and that by repeating the inoculations, from time to time, those living in an endemic area may hope to escape infection for an indefinite time. No deaths from cholera occurred for twelve months among the inoculated in Calcutta excepting those that took place within the first four days after the operation—the period which seems necessary to establish the immunity." Among 5,357 laborers in the Cachar tea-gardens, 2,381 were inoculated, and 2,976 remained unprotected; the inoculated furnished only 4 deaths; the uninoculated, 60 deaths. Of a large number of native laborers at Margherita, recently inoculated by Surgeon-Captain Hare, 2.55 per cent. died of cholera, while the percentage of deaths among the inoculated was 19.

Protection afforded by inoculations does not seem to persist beyond a year or eighteen months. Probably after the effects of the inoculations have passed, the patient's susceptibility returns to normal. Just as the immunity conferred by a previous attack of declared cholera or of choleraic diarrhœa is only temporary, so is the protection afforded by inoculations. So that Haffkine's method will prove of inestimable value as a means of protecting communities exposed only to occasional visitations of the epidemic disease.

Woodbridge Treatment of Typhoid Fever.

In a "Symposium on Typhoid Fever," by Dr. William R. Chittick, Clinical Professor of Medicine in the Detroit Medical College, he says (*Phys. & Surg.*, Jan., 1898): "Regarding the 'Woodbridge treatment,' I have little to say bearing upon its efficacy. I have given it a fair trial in hospital practice, and have noticed no superior results." "It must not be forgotten that many cases of typhoid fever recover without any special therapeutic treatment. Our late Dr. Long, of the Marine Hospital Service, reported *twenty such recoveries in twenty cases.* He merely pushed milk diet, with efficient doses of quinine for hyperpyrexia, and we know that sailors always present unusually bad cases."

How Much Saline Solution the Colon Absorbs

Is remarkable—and that quickly, almost greedily. Dr. S. Marx reports (*Canad. Prac.*, Feb., 1898,) that in a primipara in collapse after labor, *one pint of saline solution was injected hourly*, for twenty-four hours—all being absorbed—and the patient quickly rallied.

Book Notices.

Diseases of the Stomach—*Their Special Pathology, Diagnosis and Treatment.* **With Special Sections on Anatomy, Physiology, Analysis of Stomach Contents, Dietetics, Surgery of the Stomach, etc.** *In Three Parts.* By JOHN C. HEMMETER, M. B., M. D., PHILOS. D., Clinical Professor of Medicine at the Baltimore Medical College, etc. *With Many Original Illustrations, a Number of Which are in Colors, and a Lithograph Frontispiece.* Philadelphia: P. Blakiston, Son & Co. 1897. Large 8vo. Pp. 788. Cloth. $6.

However perfect a work may be, in this rapidly progressive age, there is often a sort of regret that its issue was not delayed just long enough to include the very latest of recognized facts. Late in 1897 Dr. Carl Schlotter had a patient from whom a cancerous stomach was removed. The patient is still living, and is said to be doing well—not even a sign nor a symptom of the return of the cancer in any portion of the body having yet developed. Some have thought it mysterious that sufficient food can be digested in the upper part of the alimentary canal to sustain life, and even relatively good health. But some of the mysteries connected with that case disappear when we recall that properly prepared foods introduced in the rectum and lower colon may be assimilated, and vital powers of the person maintained thereby for an indefinite length of time. But even with omission of reference to this important case, a very positive want of the profession is supplied by the issue of this book at this time. It makes plain many of the processes of the stomach functions. Plates I and II appear to be original in design, and well show the positions of bloodvessels and lymphatics to the different gastric layers, as also the reconstruction of a small portion of the middle zone of the stomach. Many of the observations, original with the author, have been made after examinations of the stomach with instruments of recent design. In the chapters on diseases, we find that they have been studied from a clinical as well as a scientific point of view. The chapters on therapy and materia medica of stomach diseases contain most of the latest as well as best of information and advice. But why, in the mention of the "useful mineral springs of the United States," reference should be made to "Church Hill Alum Springs," of Richmond, Va., which, we venture, are unknown by most of the profession of this city, while yet no allusion is made to the wonderful virtues of Buffalo Lithia

Springs, and known to most of the profession of this country, we are at a loss to understand. The table of differential diagnostic points between cancer, ulcer, gastralgia, hyperchlorhydria and chronic gastritis, is about the most complete that we have ever seen, and is of special use to the practitioner. Indeed, taking the book all in all, its shortcomings are so few, and its values so great and so many, that we regard this as the most reliable and useful of monographic works for the doctor who has a gastric case that needs the help of information or suggestion. A great deal of attention is given to details—how to use instruments, etc. The doctor who buys and reads this book will soon realize that his money has been well spent. It will prove of almost daily utility to the general practitioner.

Transactions of American Microscopical Society. *Twentieth Annual Meeting, held at Toledo, O., August* 5, 6 and 7, 1897. EDITED BY THE SECRETARY. Vol. XIX. 8vo. Pp. 208. Pamphlet. $2.

In looking over a list of members of this Society, we are surprised to find so few from the South. It cannot be that microscopical work is not done or appreciated, for we know of some microscopists in our community whose discoveries and preparations are sought in foreign countries. Yet they cannot hope to reach that eminence in a special profession unless they join such organizations as this, and contribute from their annual earnings of information to the common stock of knowledge. Mr. J. C. Smith, of New Orleans, is the only Southern contributor to this excellent volume. The *Transactions* of this Society are regarded as standard authority throughout the microscopical world. Among papers of special interest to the histologist is one by Dr. A. E. Loveland, of New Haven, giving "a study of the organs of taste." Another is by Raymond C. Reed, Ph. B., Ithaca, N. Y., on "dahlia as a stain for bacteria in sections cut by the collodion method" Dr. Veranus A. Moore, Ithaca, N. Y., describes "a new and convenient instrument for drawing blood for microscopical examination," which he figures, and calls the "hemospart." Mr. Edward Pennock, Philadelphia, describes "two very simple microtomes," "which will doubtless be found a real aid to good work," at the lowest cost. Other papers of interest to histologists are "the comparative histology of the digestive tract," by Edith J Claypole, Ph. B., Wellesley, Mass., and "a comparison of the phagocytic action of leukocytes in amphibia and mammalia," by John M. Berry, Peterboro, N. Y. There is much more in this volume of interest to microscopists, to which want of space will not even allow reference. The next meeting of the Society will be held in Syracuse, N. Y., August 30, 1898. Dr. WM. C. Krauss, Buffalo, N. Y., is the secretary.

American Year-Book of Medicine and Surgery *Collected and Arranged with Critical Editorial Comments, by* TWENTY-SEVEN AMERICAN ASSOCIATES. *Under the General Editorial Charge of* GEORGE M. GOULD, M. D. *Illustrated.* Philadelphia: W. B. Saunders. 1898. Royal 8vo. Pp. 1078—viii. Cloth, $6.50; half Morocco, $7.50, *net.*

This is the *third* "*yearly digest* of scientific progress and authoritative opinion in all branches of medicine and surgery, drawn from journals, monographs and text-books of the leading American authors and investigators," through 1897. It contains not only the facts which seem to have been in advance of the books of the years before, as given by the authors, but all such facts have been subjected to critical analysis, and their merit sifted and weighed by an able corps of editorial critics. So that this work is not only a record, but a review of writings and lectures, which gives it a special value. It is remarkable how thoroughly practical each editor has made the chapter for which he is responsible. The volume is profusely illustrated with numerous wood cuts in the text, and thirty-three handsome half-tone colored plates. Of the 27 editorial staff, 15 are from Philadelphia, 4 from New York, 3 from Chicago, 2 from Cleveland, and 1 each from Boston, Baltimore and Montreal—each one an authority in his own field. It is easy to note very positive improvements in this edition as compared with those of former years—that improvement which comes of experience in a special work in each of the fifteen departments into which the work is divided. This work is a most valuable addition to any medical library—bringing the text-books up to date, and noting advances that could not have been included even in the most recent additions. This "year-book" is worth many journals to any practitioner.

Modern Pathological and Therapeutic Study of Rheumatism, Gout, Rheumatoid, Arthritis and Allied Affections. By EDMUND L. GROS, M. D., Faculty of Paris. Copyrighted.

This is an adroitly worded advertisement which leads him who receives it to read it in constant expectancy of reaching a solution of some vexed questions, but he is disappointed, and then wonders how he was "sold."

Transactions of the Medical Society of the District of Columbia (from March, 1896 to Jan'y, 1897). *Vol. I.* Large 8vo. Pp. 246. Paper. *Editing Committee:* Drs. W. W. JOHNSTON, GEO. M. KOBER, JAMES D. MORGAN.

In comparison with the *Transactions* of other Societies, we find in this volume more to interest, instruct and entertain. In fact, as reported in the *National Review*, from the pages of which this volume is a republication, there has been a practical value in this Society's transactions which have always afforded us profit in reading. There is, however, one glaring oversight in the issue of this volume which the Editing Committee, we trust, will supply in future publications, and that is the omission of an Index. Not even a table of contents is given. Thus, much of the valuable material in this otherwise most creditable publication will be lost to the profession. The Society should congratulate itself that it secured such favorable terms with Dr. Stowell, who edits a most excellent journal. It ought to allow him a better margin of profit, if we understand the rates, and thus enable him to give a more extended circulation to the journal which regularly contains a report of its proceedings. The day has come when few care for the bound volume of Society's proceedings. They are as so much waste paper—especially if the *Transactions are journalized* in a standard journal which is annually well indexed as to authors and subjects.

Twentieth Century Practice. *An International Encyclopædia of Modern Medical Science. By Leading Authorities of Europe and America.* Edited by THOMAS L. STEDMAN, M. D., New York City. *In Twenty Volumes. Volume XIII, "Infectious Diseases."* New York: Wm. Wood & Co. 1898.

We have so often expressed favorable opinions of this great work by leading authorities of Europe and America, that it is only necessary now to speak of volumes as they appear in their regular order—at intervals of about each three months. This Volume XIII we look upon as rather fortunately delayed in publication until now. Since the issue of Volume I in January, 1895, so much of theory and conjecture concerning ptomains, toxins and leucomains, infection and immunity, and the serum treatment of disease, etc., has give place to fact and description of methods, and journal literature has been teeming on these and allied subjects, that the time has come when doctors must be glad to know that all items are sifted and a record made in book form of what may be relied on. Of all the world, no other author than Dr. Victor C. Vaughan would have been the first choice of the profession for writing up "ptomains, toxins and leucomains." His contributions to literature on these things have stood out prominently as the most valuable of all authorities. So that we recognize our inability to discuss with him any of the conclusions at which he has arrived—if, indeed, they are not beyond debate. Dr. Harold C. Ernst, of Boston, follows with a chapter of nearly 150 pages on "infection and immunity,"—including a long subchapter on "serum treatment,"—which is about the best exposé of the entire subject that we have anywhere seen. Mr. Ernest Hart and Dr. Solomon C. Smith contribute the article of nearly a hundred pages on "Water-borne diseases." It will be recalled that it was Mr. Hart's writings which did so much to popularize our knowledge of the sure means of prevention of cholera. Mr. Dawson Williams, of London, contributes the chapter on "the duration of the periods of incubation and infectiousness in acute specific diseases," and it is an excellent one. Dr. John Wm. Moore, of Dublin, is the author of the chapter on small-pox; Dr. P. Broardel, of Paris, the one on "vaccina;" and Dr. Jules Comby, of Paris, the one on mumps. Thus of the eight authors, only two are Americans. The index to this volume is good. In short, everything about it is plain, practical, useful.

Orthopedic Surgery. By JAMES E. MOORE, M.D., Professor of Orthopedia and Clinical Surgery, College of Medicine of University of Minnesota, etc *With 177 Illustrations.* Philadelphia: W. B. Saunders. 1898. Cloth. 8vo. Pp. 354. $2.50 net.

One is struck by the plain, practical way in which our author deals with each subject in the twenty-four chapters. Nothing is recommended which the general surgeon cannot procure at the nearest instrument maker or manufacture for himself with the tools and materials in his neighborhood. Much stress is rightfully laid upon the importance of early diagnosis in order that proper treatment may be promptly begun and thus prove successful before the incurable stage approaches. There is a conservatism about the author's recommendations which does not sacrifice thorough work and good results which we are compelled to commend to the careful study of many of the present day so-called radical surgeons. The illustrations abundantly introduced in the text appear to be mostly drawn from photographs, are well executed, and are aptly

selected and placed so as to give the clearest understanding to the descriptions. This is a book that is as serviceable to the country doctor as to the one who practises in the city; while to the surgeon who wishes to add to his knowledge of practical methods of diagnosis and treatment this work cannot be otherwise than helpful. While the author has drawn his facts mostly from personal experience, he has not hesitated to recommend the simplest of the best methods adopted by other surgeons.

Diseases and Injuries of the Conjunctiva—Especially the So-called Granulated Lids. By JOHN H. THOMPSON, M. D., Professor of Ophthalmology and Otology, Kansas City Medical College, Mo. *With Illustrations.* Kansas City, Mo.: Hudson-Kimberly Publishing Co. 1898. Cloth. 12mo. Pp. 216.

We have received a number of odds and ends of information from the careful reading of this book. It is written in a plain, practical style — almost colloquial — and thereby the author teaches in a manner that is taking. It would seem from the preface that the author deems it essential to read this monograph page by page, in order to arrive at a proper understanding of "granulated lids." But it does not seem to us that such is necessary; for the "recapitulation" (given on pages 132–134) itself makes the subject intelligible. He states: "The term 'granulated lids' can mean either of three diseases—trachoma, chronic blenorrhœa and follicular conjunctivitis;" and then sums a diagnostic description of each, which, it appears to us, is a sufficiently clear exposé of the whole matter. However, this does not represent the real scope or usefulness of the book. It treats of all the diseases and forms of injury of the conjunctiva, which are apt to come under the care of the practitioner. It clearly presents points of diagnosis; and having led up to this, it gives in sufficient detail the indications for, and technique of treatment. It is an excellent practical book for the general practitioner especially.

Abernethy Was Notoriously Laconic.

One day a woman, who had burned her hand, was a patient. Showing him the wound, she said: "A burn." "A poultice," was his reply. Next day she called and said: "Better." "Repeat," said the doctor. In a week, she called and said: "Well. Your fee?" Abernethy replied: "Nothing. You are the most sensible woman I ever met."

Editorial.

Change in Price of Subscription to the Virginia Medical Semi-Monthly.

Beginning with *first issue in April*, 1898—beginning of the *Third Annual Volume*—the subscription price of this journal will be reduced to *Two Dollars a year.* We have long contemplated a reduction in price, and have desired to make it as large as possible; but we had not anticipated until the past year that the success of the *SemiMonthly* would soon justify a *reduction of thirtythree and a third per cent.* Now, however, we take great pleasure in announcing the fact, and trust that it will meet with proper responses from our friends.

Our books will be balanced through March, 1898, at the rate of three dollars a year for annual subscriptions through the month. Parties who have paid at the rate of $3.00 a year, but who have receipts going beyond March, will have their balances on our books properly adjusted as beginning with the first April 1898 issue.

Our subscribers will bear us out in the statement that it is exceedingly rare that we occupy any portion of the reading pages of the journal to speak of any of its interests. We hope we are pardonable, therefor , in occupying these few lines to call special attention to the *special offers* and the Two page Special Advertisement of the reduction of the subscription price, to be found after reading pages.

Cooper Medical College, San Francisco,

Has taken an advanced step, so far as the medical colleges of this country are concerned. It has adopted the system of annually selecting an author of world-wide fame to deliver one or more lectures on the subject regarding which the eminence of his reputation relates. It is called "The Lane Course of Medical Lectures," in honor of the President of the College, Dr. L. C. Lane, who provides for the expenses connected with the Course. One of the September, 1897, Lectures was by Christopher Heath, F. R. C. S., Holme Professor of Surgery, University College, London—his subject being *Aneurism.* This "Lane Course of Medical Lectures," to be delivered in 1898, will be by Thos. Clifford Allbutt, Regius Professor of Physic in the University of Cambridge, England, and Editor of the *System of Medicine*, in course of publication by Macmillan & Co. These Lectures for 1898 are to be entirely on *Diseases of the Heart*, and are open to all members of the regular profession on the Pacific Coast.

American Medical Association—Section on Materia Medica and Therapeutics.

The following papers and discussions have been promised for the meeting at Denver, Col., June 7–10, 1898:

Yellow Fever: Its Etiology and Treatment. Discussion by Surgeon-General George M. Sternberg, Washington, D. C.; Drs. John Guiteras, Philadelphia; Sollace Mitchell, Jacksonville, Fla.; T. S. Scales, Mobile; Ala.; G. B. Thornton, Memphis, Tenn.; H. M. Bracken, Minneapolis, Minn.; P. E. Archinard, New Orleans, La.

Aims of Modern Treatment of Tuberculosis. By Prof. Edwin Klebs, Chicago. Discussion by Drs. Charles Denison, Denver, Col.; C. H. Whitman, Los Angeles, Cal.

Serum-Therapy of Tuberculosis. By Prof. S. O. L. Potter, San Francisco, Cal. Discussion by Prof. James M. Anders, Philadelphia.

Therapeutics of Pulmonary Phthisis. By Dr. Paul Paquin, St. Louis, Mo.

Tuberculin as a Diagnostic and Curative Agent, with Report of 250 Tubercular Cases Treated. By Dr. C. H. Whitman, Los Angeles, Cal.

Practical Value of Artificial Serum in Medical Cases. By Dr. P. C. Remondino, San Diego, Cal.

Use of Remedies in Diseases of the Heart and Blood-Vessels. By Dr. T. Lauder Brunton, London, England.

The Mescal Button. By Prof. D. W. Prentiss, Washington, D. C.

Modern Intestinal Antiseptics and Astringents. By Dr. William Frankhauser, New York.

To What Extent is Typhoid Fever Favorably Modified in its Course, Duration, Termination, or Sequelæ, by the Administration of Drugs. By Dr. Frank Woodbury, Philadelphia, Pa.

Strychnine. By Dr. J. N. Upshur, Richmond, Va.

Methods of Teaching Materia Medica and Therapeutics. By Prof. G. H. Rohé, Baltimore.

Study of Materia Medica and Therapeutics. By Dr. H. M. Bracken, Minneapolis, Minn.

Great Therapeutic Importance of a Rational Adaptation of Cathartic Remedies to the Physiological Functions of the Gastro-Intestinal System. By Dr. E. D. McDaniels, Mobile, Ala.

Why the Pharmacopial Preparations Should be Prescribed and Used by the Profession. By Leon L. Solomon, Louisville, Ky.

Use of Electricity by the General Practitioner. By Dr. Caleb Brown, Sac City, Ia.

The following have also promised papers, subjects to be announced together with the day assigned:

Drs. J. E. Atkinson, Baltimore; Henry Beates, Philadelphia; T. M. Balliet, Philadelphia; George F. Butler, Chicago; Dudley W. Buxton, London, Eng.; J. Solis-Cohen, Philadelphia; N. S. Davis, Jr., Chicago; P. J. Farnsworth, Clinton, Ia.; J. E. Moses, Kansas City, Mo.; Prof. Jos. Remington, Philadelphia Pa.; Drs. L. E. Sayre, Lawrence, Kan.; H. V. Sweringen, Fort Wayne, Ind.; E. L. Stevens, Fort Worth, Texas.

The chairman, Dr. John V. Shoemaker, 1519 Walnut St., Philadelphia, Pa., will be pleased to receive and place upon the programme subjects for discussion and papers.

Imposing Penalties for Practicing Without License.

The New York County Medical Society is seeing to it that the law of that State on this subject must be enforced. As a result, a number of fines, ranging from one to five hundred dollars, have recently been imposed upon pseudo-physicians, druggists, and others, who essay to practice the healing art without being properly authorized. The New York druggist, Finney, it is stated, has been fined $150 for violating the State law by practicing medicine. Who will undertake the good work in other places? Even if the Virginia laws on such a subject were executed with only a moderate degree of firmness, for one year, a sum large enough would be realized to greatly assist the State in paying off its annual interest indebtedness. In fact, a very respectable State general hospital could be started on "the savings." Who will, in earnest, start the just move in Virginia? We are constantly hearing of "over-the-counter prescribing."

Richmond Academy of Medicine and Surgery

Has moved its quarters since January 1st, 1898, to the third floor Hall of the Lee Camp Building (Veteran Hall), 514 and 516 east Broad street. Its meetings are every second and fourth Tuesday nights of each month during the year. Regular practitioners visiting the city are welcomed. Dr. M. D. Hoge, Jr., is President; Dr. Mark W. Peyser, Sec'y.

New Editor of British Medical Journal.

Dr. Dawson Williams, who has been connected with its editorial department under Mr. Ernest Hart for seventeen years, was, on January 19th, unanimously appointed by the Council of the American Medical Association editor of the *Journal.* Mr. C. Louis Taylor, a subeditor for the last eleven years, was appointed assistant editor.

Correction of Dispensary Abuses.

Fortunately for the South, there is as yet but little of what is known as "dispensary abuses"—that is, the attendance upon the charity clinics of the "well-to-do" class of people. But the "abuses" occurring in almost every other section make it plain that the able-to-pay class of the South will sooner or later popularize the system of imposition on the profession. It is well for doctors in charge of such dispensaries to be on their guard, and as soon as it is noticed that abuses of the charity intent are begun to stop it then. We notice in an exchange a suggestion which is worthy to bear in mind if such an abuse should creep in a Southern dispensary or clinic. A heavily jewelled woman came into the clinic for diseases of the skin. After she had taken off at the professor's request some elegant silk underwear and other things, indicative of her being a woman of means, he demonstrated to the class the devious paths of the itch insect on her person. The patient was non-plussed and taught an indelibly impressed lesson of infinite value when she reminded the professor that he had not prescribed, and asked him what she must do for his clinic. The professor replied that she had come to the wrong place to consult a doctor on such a subject, or to expect a prescription without the fee usually charged in the community, and advised her to consult her regular physician about such a matter, and pay him for his services. He could do nothing else for her than to show the interesting cases of itch to the students assembled, and to wish her a speedy recovery under the care of her own physician. This woman has never since been heard of in a free dispensary or clinic.

Klondike Doctors Must Pass Medical Examining Board.

The *Medical Sentinel*, Feb., 1898, notifies the numbers of doctors who contemplate trying their fortunes in the Klondike country that it is absolutely necessary for them to pass examination before the Board of Medical Examiners of the Northwest Territory (*not* British Columbia), whose headquarters is Calgary, of whom Dr. Britt, of Banff, N. W. Territory, is Registrar. The medical law will be enforced by the Provincial authorities. It will save lots of trouble, inconvenience, and loss of time, for prospecting physicians to read this notice and govern themselves accordingly before they demand nuggets of gold in this country of cold and gold for professional services.

Medical and Surgical Staff United States Army.

In view of the almost inevitable near-at-hand declaration of war between Spain and the United States, it is of vital importance to American success to select an altogether competent medical and surgical corps. The medical officers of the regular army, as at present composed, are ready and trained. But we suppose an immediate draft will be made upon the States for at least 100,000 troops—calling first upon the military organizations already existing in the States to meet the quota. Many of these organizations have not looked forward to the near approach of war, and have not selected their surgeons and assistant surgeons with an eye to campaign duty. Most probably the seat of active campaign will be in the waters about and on the Island of Cuba. And it should not be forgotten that but few Americans removed from the South Atlantic and Gulf coasts are immune to the diseases which annually are most rife and fatal there in the summer season. It is much more probable that the army of invasion will suffer more from disease than from wounds. So that a most important preparation of the medical man who is "itching for the fray" is that he should promptly and thoroughly familiarize himself with the diseases incident to that climate—yellow fever and malarial fevers especially. Of course he should see to it in advance that every soldier is protectively vaccinated. He should attend to this much now, before "moving orders" are received. "In time of peace, prepare for war."

The Return of the Blister.

So much has been written about "the passing of the plaster-of-Paris splint," "the cantharidal blister," etc., we were beginning to think that we were "representing an old issue." But knowing that "truth, crushed to earth, will rise again," we had not given up the use of the blister, with its usual good results, in properly selected cases M. Ferraud, of Paris, in a recent paper, stated that the revulsive method is "accused of creating on the surface of the body an open sore, capable of facilitating the entry of infectious germs." But he adds that a well-dressed blister generally heals without producing a sore; and in the event it does, this inconvenience can be easily treated by antiseptic applications. It is not denied that, in certain cases, renal troubles result from the absorption of cantharides, which enters into the blisters; but it is easy to avoid such troubles by limiting the duration of stay of the

vesicant. "However, the action of cantharides is far from being always prejudical to the kidneys." In fact, cantharides stands recommended for certain forms of nephritis; and it has even been recently proven that, if prescribed in cases of interstitial nephritis, it can be given with benefit. We further learn (from *Medical Press*, February 16, 1898) that M. Ferraud—as regards the indications of the blister—showed that they vary according to the seat, the form and the nature of the malady; but it is especially in inflammations of the serous membranes that cantharidal blisters give the best results. Let the motto be: "Prove all things; hold fast to that which is good."

American Medical Association.

The Committee of Arrangements for the meeting in Denver next June are working like beavers to make it the most memorable of any ever held. Over $6,000 have already been secured by the profession of that city as a contribution to the entertainment of the visitors. They have asked the Western Traffic Association to furnish members of the Association with half rates and a time limit of thirty days in order to afford an opportunity to visit points of interest in the great West. Denver hotels and boarding houses are making favorable concessions as to rates. Excursions are promised beyond Georgetown "Over the Loop." Colorado Springs and Manitou excursions are also in store. The Ladies Committee are arranging for the proper entertainment of the visiting ladies. If one will read the *Colorado Medical Journal* for February, he will see for himself what magnificent preparations are being made for his entertainment, comfort, and profit, and it fills him with a sort of enthusiastic desire to go and enjoy the good things in store. We hope a large number from the Atlantic Coast will avail themselves of this opportunity.

Dr. Frank Boyd, Paducah, Ky.,

On account of a severe dermatitis in a patient subjected to an X-ray examination, during October, 1897, was sued for $10,000. The plaintiff claimed that the apparatus was carelessly used, and that the means employed was not well enough understood to warrant its use in locating foreign bodies. *The court held in favor of the defendant.*

Dr. William Pepper, of Philadelphia,

Has not been able to attend materially to professional work for some time because of impaired health. He is now on a trip through the Southern States in the hope of recuperation. During his expected two months' absence from Philadelphia, his professorial duties at the University of Pennsylvania are being performed by Dr. Alfred Stengel.

Dr. William Pepper,

It is said, is being urged by friends to become an "independent" candidate for the mayoralty of Philadelphia. Any city that could secure such a man for its leading officer would deserve congratulations.

Health Officers Appointed.

Dr. William Welch, of the Johns Hopkins University, Baltimore, Md., has been appointed on the State Board of Health of Maryland.

Dr. Benjamin Lee is the newly appointed health officer of Philadelphia. Both are capital selections.

Examine Those Proposing to Study Medicine.

In 1894–5, an annual test examination was established in the Calcutta Medical College with a view to weeding out students who had no aptitude for medical study, and no hope of success in the final examination. The measure has brought excellent results. The numbers in the College has risen from 255 to 468 students during the quinquennial period.

Naval Hospital Corps Proposed.

Secretary Long has sent to the House Naval Committee a draft of a bill "to organize a hospital corps of the United States Navy, to define its duties and regulate its pay." The Secretary says it is understood that the operations of the Army Hospital Corps are satisfactory, and that a similar organization in the navy can be established and maintained with practically no additional expense. The corps, as proposed, is to consist of twenty pharmacists at $75 per month and five at $100; sixty-five hospital stewards at $60; thirty first-class hospital apprentices at $24; sixty hospital apprentices at $18. The proposed naval hospitals are to be located at Portsmouth, N. H.; Chelsea, Mass.; Newport, R. I; New York City, Philadelphia, Washington, Norfolk, Va.; Pensacola, Fla.; Mare Island, Cal. and Yokohama, Japan. The scheme includes navy-yards and flagships.—*The Journal, Jan.* 15th.

Obituary Record.

Dr. Thomas Jefferson Moore

Died at his home in Richmond, Va., during the afternoon of February 24, 1898, from the effects of an apoplectic stroke which he suffered during the previous morning. On the night of February 22, he attended the meeting of the Richmond Academy of Medicine and Surgery and participated in the discussions of the evening.

Dr. Moore was born in Charlotte, N. C., April 30, 1840. Afte · attending some private schools of his State, he completed his academic education at the University of Virginia. He left that institution in 1861 to enter the service of the Confederate States Army, and during the greater part of the War he was attached to the Staff of Genl. A. P. Hill in the campaigns of the Army of Northern Virginia. When the War was ended, he entered upon the study of medicine in Bellevue Hospital Medical College of New York city, from which he received his medical degree in 1868. He then served as house physician and surgeon in Bellevue Hospital till 1870. During this term, he also was one of Prof. Darling's Assistant Demonstrators of Anatomy in the University of the City of New York. Returning to his North Carolina home, he entered upon the practice of his profession, where he continued until about 1882, when he moved to Richmond, Va., where he has ever since continued in practice. He was Senator in the North Carolina Legislature for the term 1876–7, and from 1875 to 1882 inclusive he was Secretary of the Mecklenburg (N. C.) Historical Society. He was essayist of the Medical Society of North Carolina in 1880; was its Vice-President in 1881, and afterwards was elected an Honorary Member of the same. On moving to Virginia, he joined the Medical Society of Virginia 1884, and attended most of its sessions. He was nominated by the Society, on organization of the Virginia State Board of Medical Examiners in April, 1885, to serve four years as one of the two Examiners from the State at-large—during which term he rendered the Board most efficient service. In 1889, he was the orator-elect for the Medical Society of Virginia, in whose behalf he was continuously interested—being one of the Executive Committee up to the time of his death. He was an ex-President of the former Richmond Medical and Surgical Society, and also of its successor, the Richmond Academy of Medicine and Surgery. He was a member of the American Medical Association, and was found ever ready to render help to any cause of the profession. In 1893, in the organization of the University College of Medicine, Richmond, Va., he was chosen Professor of Clinical Medicine, as also Chairman of the School of Medicine in the University, which positions he held until his death. As a lecturer, when interested in his subjec,t he had few equals either in the clearness of descriptions or in the selection of language which always held his audience in intensest interest. He was engaged in preparing one of the chapters for an early volume of the *Twentieth Century Practice of Medicine.*

We have to go to press in advance of the funeral services, which are to occur on the 26th inst. Meetings of the Richmond Academy of Medicine and Surgery, and of the Faculty of the University College of Medicine, are called for February 25th, to take suitable action.

Dr. John Berrien Lindsley,

Born in Princeton, New Jersey, October 24, 1822, recently died at his home in Nashville, Tennessee, where he had resided since young manhood. He received his academic education from the University of Nashville. He studied medicine in the University of Louisville, and of Pennsylvania. After graduating in medicine, he studied theology, and was ordained a minister in 1846. In 1847, he made an extensive geological survey through the Eastern and Northern States. Afterwards he spent seven years in medical studies in France and England. On his return, he was instrumental in founding the Medical Department of the University of Nashville. He was its first Dean and Professor of Chemistry, which Chair he filled for twenty-three years Then he was made Chancellor of the University. In 1870, he helped to found the Tennessee College of Pharmacy. In 1876, he was made Professor of Materia Medica in this College. From 1876 to 1880, he was the Health Officer of Nashville. In 1880, he was made Professor of Preventive Medicine in the Medical Department of the University of Tennessee. In 1877, he was appointed a member of the Tennessee State Board of Health. He was made its Secretary, which position he held until his death. He was owner of the *Nashville Journal of Medicine and Susgery*, to which he contributed many vigorous editorials and polished papers.

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RUPTURE OF THE UTERUS; ITS ETIOLOGY, DIAGNOSIS AND THERAPEUTICS.*

By GEORGE TUCKER HARRISON, M. A., M. D., New York,

Obstetrician to the New York Infant Asylum; Honorary Fellow Medical Society of Virginia, etc.

However interesting the subject of rupture of the uterus occurring during pregnancy may be, it does not lie within the scope of this paper to enter upon its discussion. My theme is rupture of the lower uterine segment and cervix occurring during birth. No injury or disease affecting the parturient woman is more dangerous, and no other event that can occur in the lying-in-chamber or hospital fills the mind and heart of the obstetrician with a deeper sense of responsibility. It is fortunate that it lies within our power, as a rule, to avert this catastrophe by a careful attention to the symptoms which denote that it is impending. To that end it is of supreme importance to study earnestly its mechanism.

We owe our knowledge of this mechanism mainly to the researches of Bandl, whose memory should be cherished by every lover of medical science. The views which he enunciated in 1875 were in strict harmony with scientific truth, and illumined a theme which had previously been enshrouded in mystery and obscurity. Only in minor details has it been necessary to modify the doctrine he taught.

In order to attain a proper appreciation and correct understanding of the mechanical factors operative in the production of a rupture, it is necessary to recall the mechanism by which birth takes place under normal conditions. We must discriminate in the uterus during birth, an *active, contracting part*, the surface of which diminishes while its wall thickens; and, secondly, a *passive part*, in which enlargement of the surface and attenuation of the walls keep pace with the advance of the birth. The boundary between the two parts is defined by the *ring of contracttion*. It about corresponds to the boundary on the anterior surface of the uterus, between the firm and looser attachment of the peritoneum. *Formation* of the *ring of contraction, distention of the lower uterine segment, complete dilatation of the os uteri, engagement of the head in the pelvis*, are processes observed in physiological labor, and are closely correlated.

When the first stage of labor is in progress the effects of the uterine contractions are such that the uterine muscle gradually retracts above while the ovum remains in the same place relatively to the pelvis. An apparent downward movement on the part of the ovum is caused by the fact that the cervix is gradually drawn upwards. The active contracting part of the uterine body at the ring of contraction goes over into the attenuated lower uterine segment. The higher the ring of contraction ascends on the ovum, the more are the lower uterine segment and cervical canal distended, while at the same time the os uteri dilates proportionately.

Towards the end of the first stage, the relations undergo a change in consequence of the operation of the two causes, the one originating in the fact that the uterine body is attached on all sides in the pelvis, and cannot retract above to an indefinite extent; and the second arising from the co operation of the abdominal muscles in the act of "bearing down." In consequence of the attachment of the uterus in the pelvis, the uterine muscular part towards the end of the period of dilatation cannot retract above to a greater extent, and, therefore, now as a result of its contracting, forces its contents downwards. On the other hand, by the powerful action of the abdominal muscles in the act of "bearing down," the entire uterus, and, with it, its contents are forced downwards. If in spite of powerful uterine

*Read before the Medical Society of Virginia during its meeting held at the Hot Springs, Va., Sept. 1, 1897.

contractions and the co-operation of the abdominal muscles, there is no advance of the fœtus, in consequence of the obstacle founded in mechanical relations, the lower uterine segment soon exhibits signs of over-distention. The degree of distention is governed by the extent of the resistance, and is, in general, indicated by the high position of the ring of contraction, which gradually becomes perceptible above the symphysis as a furrow running transversely across the abdomen.

If now the presenting part cannot move forward, or even engage in the pelvis, the muscular part retracts more and more above the fœtus, so far as the attachments allow, and, especially, the *ligamenta rotunda*, and finally the greater part of the fœtus lies in the strongly-distended and greatly-attenuated lower uterine segment and cervix. Under these circumstances the *ring of contraction* may be found just beneath or even above the umbilicus. The thin walls of the cavity formed by the lower uterine segment and cervix, when the distention is very great, are capable of contraction, in consequence of the feeble development of the muscular tissue, and necessarily stand under a high degree of pressure which is intensified with every contraction of the uterus, as, at the same time, the fœtus is little by little forced out of the contracting body. The thin, muscular fibres gradually separate, the presenting part of the child pushes its way between them on the side that yields and endeavors to make its escape at this point. Finally at the height of a contraction the limit of the power of resistance of the over-distended wall is reached, it gives way, the head pushes the peritoneum before it, detaching it from its substratum, until at last it is ruptured, and when the rent has attained the requisite size, the head first, and then the body of the fœtus is extruded into the abdominal cavity.

When this stage has been reached in the order of events the evacuated uterus contracts, and there is a cessation of its activity. Under rare conditions the peritoneum is not ruptured, but is lifted from the seat of rupture by an extravasation of blood. The distention is rarely uniform. In transverse presentation it is greatest at the point corresponding to the head; in head presentations, where the occiput is situated. The rupture takes place at the point of greatest distention. The genesis of the violent rupture involves as a postulate the same mechanical conditions as the spontaneous; the distended lower uterine segment is taxed beyond its power of resistance—the distinction being that *here* it is not the force of the contraction propelling still more of the fœtus into the threatened part that is to blame, but the introduction of the hand into the lower uterine segment, usually in an attempt at version.

In one case in which I was in consultation the application of the forceps to the after coming head was responsible for the rupture. Bandl attached importance, in the mechanism of this lesion, to the fixation of the lower limit of the distended part. Recently H. W. Freund, in an exhaustive paper on the mechanism and treatment of rupture of the uterus, endeavored to rehabilitate this doctrine and make it a cardinal point in his exposition. More recently Schauta, in his admirable text-book, advocated the same view, "For the occurrence of the ordinary typical cases of rupture of the uterus with the seat in the lower uterine segment and cervix." He remarks: "It is necessary that the external os uteri be fixed in some way or other so that it cannot retract over the head, since otherwise the distention would in no wise limit itself exclusively to the lower uterine segment. The fixation of the external os uteri may be brought about either by incarceration of the lips of the os uteri between the head and pelvic wall, by abnormal resistance on the side of the external ring of the os uteri; or, on the other hand, by the natural means of attachment of the cervix, consequently the parametric connective tissue with its augmentations, but especially the vagina."

Whether such a fixation takes place or not is a matter of indifference in the mechanism. It is only in part produced by the head and its pressure on the cervix, in a far higher degree by the natural surrounding attachments. It must be borne in mind also, that even in head presentations the lips are not incarcerated, as a rule, and moreover in other cases distention with rupture may appear; as in transverse presentations, where the fixation supposed cannot come into question. The traction of the uterine muscle affects the upper part of the cervix, nor is it continued to the vaginal portion of the cervix; the lower uterine segment is subjected to the greatest traction, while the greater part of the dilated cervix has to stand more or less strain; on the other hand, external os uteri and vagina are less under the influence of traction.

It is obvious, therefore, that the condition antecedent to the occurrence of a rupture of the uterus must be a distention of the lower uterine segment which finally oversteps the limit of resistance on the part of the overstretched tissues. The distention itself demands

as a postulate a mechanical obstacle to the progress of the birth, as a narrow pelvis, tumors of the soft parts, hydrocephalus, transverse presentation, forehead presentation, position of the head with the parietal bone behind, tumors of the child, or injudicious attempts at operative intervention. The anatomical facts correspond with this exposition.

The seat of the rupture is regularly the lower uterine segment. The conditions favorable to the development of a rupture are rarely observed in primiparæ. For its occurrence there must have preceded a prolonged activity of the muscular part of the uterus without engagement of the head. In multiparæ, on the contrary, the slighter power of resistance of the wall of the lower uterine segment operates favorably, not only for the development of distention, but also of the rupture.

The above description relates to typical cases of rupture; deviations are rarely observed. As a rare exception, cases have been reported in which, without any warning, suddenly in the beginning of the birth, or at the end of pregnancy, rupture takes place. In these circumstances we must assume that a predisposition of the tissues contributes to a certain degree to its occurrence. Such a predisposition may be found in a cicatrix in the lower uterine segment, the result of a perforating tear in a preceding labor which has healed. *Placenta* prævia also forms a predisposition, as the place on the uterine wall on which the placenta is situated regularly shows a certain degree of attenuation. In just this class of cases it is the urgent demand of the hour that accurate anatomical and clinical investigation should take the place of subjective ratiocination.

The symptoms denoting impending rupture may be easily overlooked by a physician who has not a clear conception of its mechanism; but to one who possesses fullness of knowledge, the signs are plain and characteristic. The restlessness, the anxious countenance and the involuntary groans, in the interval between the pains, indicate a persistent traction of the ligaments which give the parturient woman not a moment for refreshment, and warn us not to neglect a thorough objective examination. A mere look at the abdomen of the woman shows frequently the contrast between the thick muscular portion and the high-reaching distended lower uterine segment. Making use of bimanual palpation we discern the ring of contraction, often near the umbilicus, the attenuated lower segment below, and at the same time demonstrate the obstacle to the forward movement of the child. Underneath the ring of contraction the child's parts feel as if they were just under the skin. It should be mentioned that the lower uterine segment and cervix are very sensitive to pressure and painful to touch.

A further sign is the high position of the summit of the bladder evoked by the traction of the cervix and the great strain upon the round ligaments.

Here it may be remarked that the tension of these ligaments which may be felt, imparting to the touch a sensation similar to that of the telegraph wire is said by Schauta to be occasionally insusceptible of demonstration.

The temperature and condition of the pulse should not be relied on as infallible guides; they present too many variations in different cases.

The diagnosis of impending rupture may offer great difficulties in those cases in which the signs of distention are either but slightly pronounced, or entirely wanting. These are the cases in which rupture ensues on a comparatively slight degree of distention, when there is a predisposition on the part of the lower uterine segment, a predisposition consequent upon placenta prævia, inflammatory degeneration, atrophy, etc.; and when, in addition, there is increased resistance offered by the pelvis and soft obstetrical passage. In these circumstances, when there is an obstacle to the regular course of the labor, the uterine contractions being painful, the parturient woman restless, the pulse increased in frequency, and especially in that position of the head when the parietal bone is posterior, our attention should be directed to the possibility of a threatened rupture, even without the existence of objective signs.

The symptoms of rupture in a typical case are characteristic and unmistakable. After the lapse of a few hours, however, the characteristic phenomena disappear and the diagnosis of the existence of a rupture may be attended with difficulty.

The rupture appears quite suddenly as a rule; the parturient woman feels at the height of a pain an intense cutting pain, and has, at the same time, a feeling as if some part had been lacerated or torn asunder. If the seat of rupture is accessible to examination, it will be found exceedingly sensitive to pressure.

Two very important symptoms manifest to the skilled obstetrician the true state of affairs, and are rarely missed—they are, *cessation of the activity of the uterine contractions and bleeding from the vagina.* The cessation of the pains is absolute; the bleeding which may be copious, is, however,

generally slight, and it may be even strikingly small in quantity. Another sign which is rarely missed, is the retrocession of the presenting part from the pelvic brim, and its greater mobility as contrasted with its previous state. Symptoms of collapse appear sooner or later, but they do not necessarily show themselves all at once. The pulse generally changes first; it becomes frequent, small and soft. Later appears pallor of the skin, the extremities are cold, the skin is bathed with a cold sweat, attacks of syncope come on, the patient complains of a feeling of oppression or of dyspnœa, and soon death closes the scene.

The symptoms, however, are less pronounced when the child has not entirely escaped into the abdominal cavity, but remains, to the greater part, in the genital canal.

In cases of incomplete rupture, two symptoms are found at times, although it is true *rarely*, that do not occur in the case of complete rupture.

The *first* is the development of a sub-peritoneal hæmatoma, which appears after the lapse of a few hours as a distinct tumor at the side of the uterus. The *second* symptom is incomparably less frequent, and that an *emphysema* of the connective tissue, which extends from the point of rupture beneath the peritoneum, and may appear in the anterior wall where it is perceptible to the touch.

What are the means at our commaud, it may now be asked, which modern science has furnished to combat this dread train of symptoms which pave the way for and finally culminate in a rupture of the uterus?

It is here, and so often elsewhere, in medicine and surgery, our main efforts are to be expended upon prophylaxis. To quote the appropriate words of Schauta: "The therapeutics of uterine rupture celebrates its greatest triumph in prophylaxis since the epoch-making researches of Bandl upon its ætiology."

When signs of distension of the lower uterine segment which prepare the way for rupture are present, *prophylaxis* demands that the fœtus be removed from the obstetrical canal as speedily as possible, taking care that our operative intervention should not produce further distension of the lower uterine segment, cervix, and vagina. In such circumstances, version, and any operation is contra-indicated in which the hand must be introduced into the cavity of the lower uterine segment. In transverse presentation, therefore, recourse should be had to decapitation and embryotomy rather than attempts at version. Forceps are also dangerous, because, in acting upon the head, the cervical wall, lying in close contact, may be drawn downward also, and, consequently, the lower uterine segment be subjected to further traction. Therefore, in preference to the forceps, craniotomy should be employed.

In discussing the question of the propriety of these mutilating operations, it must be borne in mind that in consequence of the high degree of contraction of the uterine body, and at the same time diminution of the inner surface, the placental site has undergone such a diminution that the exchange of oxygen between mother and child has suffered, and the latter has, in all probability, perished. How dangerous the application of the forceps may be, is shown by the case to which I applied the forceps to the after-coming head.

Nearly twenty years ago, I read before the New York Obstetrical Society* the history of a case of mistaken diagnosis and wrong treatment, and used the following language by way of preface: "In speaking of the deficiencies of physicians, Lord Bacon observes: 'The first is the discontinuance of the ancient and serious diligence of Hippocrates who used to set down a narrative of the special cases of his, and how they proceeded, and how they were judged by recovery or death.' While it cannot be considered a fault of physicians at the present age that they fail to report their favorable cases, it may well be questioned if the deficiency noted by Lord Bacon is not still existent so far as concerns the candid narration of cases which are not of a nature to redound to the sagacity or skill of the narrator. Cases, however, belonging to the latter category are often of great value, and should not be suppressed; especially useful are the narratives of those cases attended with unusual difficulties, where errors of diagnosis have been committed. And as each case of the kind possesses some individual characteristics, it cannot but prove instructive and profitable to record carefully those of more importance.

In view of these considerations, I am induced to bring before the attention of this Society the following case, that my experience may serve as an additional beacon light to warn others off this dangerous coast.

Guided by this principle, I narate the history of two cases, to show by contrast the surpassing importance of prophylaxis. The first case was copied for me from the records of the New York Infant Asylum by the House Physician, Dr. W. Rose Thomson, to whose courtesy I am much indebted:

* Vide *Transactions*, 1877.

History.

Name—Mary McCaffray; age, 36; para, 1. Nativity, Ireland.

Family history—Negative.

Personal history—Negative.

Heart—Normal.

Lungs—Normal.

Measurements.

Fundus, $12\frac{3}{4}$; ensiform, $13\frac{3}{4}$; spines, $9\frac{3}{4}$: crests, $11\frac{1}{2}$.

Ext. conj., $7\frac{1}{2}$; rt. obl., 9; left obl., $8\frac{1}{2}$; fœtal heart, 130.

Fœtal movements, felt; presentation, verte x; position, R. O. A.

Urine, normal; weight, 200 lbs.

History of Labor.

Pains began at 4 P. M., July 2d, 1897. During the first stage, the pains were good, but the cervix was slow in dilating. As patient seemed tired out, and was not making much progress, at 10:30 A. M., July 3rd, chloral hydrate, gr. xv, was given. Repeated at 10:50 A. M. Patient slept until 1 P. M. On awakening, quin. sulph., gr. xx, was administered; also at 5 P. M. Uterine contractions again became strong. On examination at 9 P. M., the cervix was found to be dilated, membrane ruptured, but the head had made no advance. An attempt was then made to deliver with forceps, traction being made in axis of pelvis. After these attempts, forceps were abandoned.

Dr. G. T. Harrison, attending obstetrician, was called at 11 P. M. At 12 P. M., Dr. Harrison performed version with great difficulty—the strongest efforts being necessary to force the head upwards even after it had become dislodged from the pelvis. After several attempts the head suddenly shot upward. The left foot was brought down. Head became extended, and was delivered with difficulty, causing complete laceration into rectum. Child delivered at 12:35. Still birth.

Crede's method of expulsion of placenta was repeatedly tried. At 2:10 A. M., Dr. Harrison introduced his hand into the uterus and brought away the placenta. Up to this time, the patient appeared to be in fairly good condition, talking rationally and showing no symptoms of distress. On delivering the placenta, the uterus was found to be ruptured. Patient's pulse now began to fail rapidly. A large quantity of iodoform gauze was packed into the rent in the uterus. Hypodermic injections of strychnine and ergotine were given repeatedly; also inhalations of amyl nitrite. Laparotomy was done at 2:40 A. M. The rupture was quickly found, but only three sutures were introduced. Patient died at 2:50 A. M., July 4, 1897.

The rent in the uterus was about two inches long on the right, three in front, and five on the left side. The gauze packing was found protruding into the abdominal cavity.

Remarks.—The first stage being suspiciously long, the external measurements were carefully verified, and digital examination of internal pelvis made. Although there was a narrowing of the inlet, the resident physician was unable to recognize it. No caput succedaneum was found, although the head was impacted. The placenta was normal, with the exception that the funis was inserted marginally.

Very respectfully,

W. Ross Thomson, M. D.,
Resident Physician, etc.

I need scarce say that I made a blunder in undertaking version, for I recognized plainly the ever-distended lower uterine segment and the hard uterine muscle above. I thought, however, in view of the fact that the woman was a primipara, that version could be safely accomplished. Craniotomy should have been done.

The other case I cannot give in detail. I saw it in consultation with Drs. Miller and Hitchcock, of New York, about two years ago. They had attempted to deliver the child by version through a round pelvis, but although the feet and body could be delivered with comparative ease, the head was detained at the brim. Here craniotomy was clearly indicated. It is only just to Dr. Hitchcock to say that he expressed that opinion before I tried the forceps.

If rupture has taken place, and the fœtus has escaped into the peritoneal cavity, the question confronting us is: Shall we deliver through the rupture, or perform laparotomy? In narrow pelves and hydrocephalus, consequently in cases in which there is a permanent disproportion between head and pelvis, laparotomy is clearly indicated. When such disproportion does not exist, and the pelvis is roomy, the child may be delivered through the rent without further injury to the tissues. Even here, as a rule, laparotomy should be performed, as we check the hæmorrhage by suture, prevent prolapse of the intestines, and, at the same time, avoid secondary infection of the abdominal cavity. Of course, if pathogenic bacteria have already found their way into the uterus, we cannot save our patient, even if the uterus is removed, as a rule.

If the rupture is not discovered until after the birth of the child, and if the general condition is good, the pulse strong and quiet, a simple compressive bandage around the abdomen may be applied and morphine exhibited —the canal, at the same time, being tamponed according to the methods of Leopold and Dûhrssen. If the bleedlng is more marked, and there is a suspicion of contamination of the peritoneal cavity, laparotomy should be performed at once. And here I may remark that the difficulties in the way of the application of the sutures is exaggerated by many authors, as the uterus can be lifted up so as to bring the rent into plain view and thus render the suturing possible.

It may be that I have tired some among you by oft-recurring terms. I must, therefore, take refuge from your adverse criticisms behind the saying of the Greeks, viz: *δις η τρις τα καλα.* Give us a fine thing two or three times over, or, as I would paraphrase it, a matter of vast importance is well worth repetition many times.

221 *West Twenty-third Street.*

FATTY LIVER—WITH REPORT OF A CASE.*

By J. N. UPSHUR, M. D., Richmond, Va.,

Professor of Practice of Medicine in the Medical College of Virginia, etc.

Some unusual features in the following case have interested me very much, and have been the incentive for this paper.

CASE.—Miss ——, æt. 24, came under my care during the summer of 1897 suffering from an attack of dysentery. I had treated her at various times during the preceding year for dyspepsia and anæmia. The dysentery proved intractable, not yielding to treatment for some days, and was succeeded by an obstinate diarrhœa. At this time, abdomen was markedly distended and uniformly tympanitic. She subsequently went to the country, but her health not improving, she was advised to return to town for further treatment. She had always suffered somewhat from dysmenorrhœa.

On her return, I found her with palid, waxy complexion, feeble pulse, sleeping badly; and abdomen very much swollen, flat on percussion, and fluctuating. The symptoms of ascites were sometimes marked, and at times there were indications of monocyst of the ovary. Diuretics of all sorts and quantities were administered without any result in reducing the dropsy. Urine at this time negative as to albumen. Appetite bad.

She entered the Sheltering Arms Hospital, where she was seen in consultation by my friend and colleague, Dr. Johnston. He was not clear as to diagnosis between ascites and monocyst of the ovary, but inclined to the former, agreeing with me as to the propriety of an exploratory incision. The abdomen was now enormously distended, and pain in back and abdomen so marked as to require constant administration of anodynes; and it was always increased on pressure. Feet and ankles swollen in the morning. Urine decreased in amount. Urinalysis showed albumen for two weeks, disappearing under the influence of caffein and nitro glycerin. Heart weak.

After full dose of strychnia, ether was given as an anæsthetic—the patient having been thoroughly prepared for operation. When the abdominal cavity was reached (through a small incision) fluid gushed out, the amount being estimated at not less than *ten gallons*, or even more, of typical ascitic fluid. The pelvis was explored; the ovaries and tubes were found cystic and inflamed, and were tied off, and removed, the raw surfaces being covered with peritoneum to prevent adhesions, by a continuous silk suture. A drainage tube was introduced, and after free irrigation with a normal salt solution, the incision was closed with a single tier of silk-worm gut sutures, and the usual aseptic dressing applied. The intestines were very much congested, as were both visceral and parietal peritoneum.

The patient did well for the first 28 hours. During the second night strength failed rapidly, circulation failing to respond to strychnia and nitro glycerin. Enemata of whiskey and beef juice were also given. Abdomen refilled with ascitic fluid. Death took place at 7 A. M. of second day.

Autopsy by Prof. E. C. Levy six and a half hours after death.—Only abdomen examined. Pelvis found filled with clotted blood. Points of ligature carefully examined and all ligatures in tact. There had been very little discharge from the drainage tube. Bowels and peritoneum congested. Kidneys and spleen evidently the seat of pathologic changes, but their nature not satisfactorily determined. Liver about normal in size and of lemon yellow color, rather resistant to knife. Microscopic examination showed it to be fatty with some fibrous tissue. Kidneys normal.

* Read before the Richmond Academy of Medicine and Surgery, February 22, 1898.

REMARKS.—The death of this patient was evidently immediately due to hæmorrhage, though I am at a loss to fix its origin. The large amount of effused fluid in the abdomen, and its rapid reaccumulation after removal, is a fact worthy of note, as ascites in fatty liver is the rare exception.

The difficulty of accurate diagnosis before autopsy was also an interesting fact This was due in part to the immense distention from the ascites, preventing satisfactory palpation of the liver; but diagnosis in cases of fatty liver without ascites is by no means easy, and often not made out before the patient comes to autopsy.

We may define fatty liver as a condition in which the liver cells are more or less converted into fat This may occur in two ways. An *infiltration* may take place, pushing aside the protoplasm until it disappears because of interference with nutrition. Or there may be *disintegration* of the liver cells into various products, one of which is oil. In the first instance, fat producing food may result in fatty infiltration, the liver becoming a depot for excessive fat or oil. In the second, or in cachectic states, oxidation being interfered with, fat accumulates in the liver, as occurs in tubercular consumption—excessive alcoholic consumption.

In the case cited above neither of these causes existed.. There was not a symptom or sign pointing to tuberculosis, and alcoholism can easily be ruled out. The patient, however, was markedly anæmic; some disorder in the blood-making organs existed, and probably was responsible for the pathologic changes in the liver.

The *morbid anatomy* of fatty liver, such as described in the case cited above, "liver uniformly large, smooth, soft, with an appearance that differs at different stages—in the first a simple distinctness of outline of the acini; in the second stage, more marked, the dark centre contrasting strongly with the lighter periphery (one form of nutmeg liver); in the third stage, the whole organ is infiltrated and assumes a yellow or brownish appearance. Organ anæmic—lighter in weight, so that it floats on water," (Tyson).

Symptoms.—There are no distinctive symptoms. Diagnosis must be made from palpation, and the previous history of the case. There is *no jaundice* the bile forming function seesm not to be interfered with. Stools may be pale. As the portal circulation is not interferred with, there is *no ascites*

In my case, ascites may possibly be accounted for by the coincidence of some cirrhosis with the fatty degeneration. Marked insomnia and loss of appetite, I observed as prominent and distressing symptoms.

Diagnosis is to be made

From amyloid liver, which is enlarged, hard, associated with albuminuria and enlarged spleen.

From incipient cirrhosis, which causes progressive atrophy.

From acute yellow atrophy by the jaundice and history of the case, usually occurring in pregnancy, or in the course of an infectious disease, poisoning by phosphorus or arsenic.

From conditions coincident with typhoid and typhus fevers, by absence of temperature rises.

Prognosis depends on the causative disease.

Treatment.—Indications point in the directions of the cause. I was impressed by observation in the case reported of the hopelessness of benefit from drugs. The patient progressed steadily downward, and I think it a question if death was hastened by the operation—so agonizing was her suffering from the enormous dropsical effusion, and the congested condition of viscera and peritoneum.

In fatty metamorphosis we have an absolutely hopeless condition, due, as it is, to the action of some poison like phosphorus, or the ultimate development of acute yellow atrophy.

Prognosis fatal.

Treatment unavailing.

210 *West Grace St.*

DENTAL-PLATE, WITH CENTRAL INCISOR ATTACHED, IMPACTED IN ŒSOPHAGUS THREE MONTHS, REMOVED PER VIAS NATURALES.*

By JOSEPH A. WHITE, A. M., M. D., Richmond, Va.,

Professor of Diseases of the Eye, and Associate Professor of Diseases of the Ear, Throat and Nose, University College of Medicine, Richmond; One of the Surgeons to the Richmond Eye, Ear and Throat Infirmary, etc.

I have invited one of my patients to be present this evening, thinking that his case might interest the members of this Academy.

Three months ago, whilst asleep, a tooth-plate to which one tooth—an upper central incisor—was attached, became loose, and was unconsciously swallowed.

Foreign bodies passing into the œsophagus are liable to lodge at one of the three constricted portions of this tube, viz , in the region of the cricoid cartillage; in the middle third on a level with the first rib where the left bronchus crosses the œsophagus; or where it passes through the diaphram. Bodies may also lodge

*Reported to the Richmond [Va.] Academy of Medicine and Surgery, February 22, 1898.

higher up at the cricoarytenoid articulation, or between the tongue and epiglottis.

In this connection, I remember an amusing experience of Dr. Paulus Irving, of this city, who was consulted by a patient who had been treated by an old physician for diphtheritic patches in the pharynx. On examination, Dr. Irving found a tooth-plate lodged in such a way that the teeth lay up against the back wall of the pharynx in plain view when the tongue was depressed, and he promptly removed it with a pair of forceps. The old doctor had taken the teeth for diphtheritic patches, and daily cauterized them, his mistake being due to defective eyesight and a slight excess of whiskey, which he generally carried.

You will observe that the plate in my hand is about 35 mm. long by 22 mm. broad, and that it is armed on each side from the tooth back to the point of the wings, with five sharp projections—a rather formidable object to swallow. When the patient awoke and became aware of what had happened, he was examined by several physicians in Lynchburg, where he was attending a business college, and they decided that if he had swallowed the tooth-plate, it had passed into the stomach, notwithstanding the fact that he could only swallow liquid food, and that in a few days his voice became dysphonic. These symptoms were attributed to the irritation caused by abrasions or wounds of the œsophagus from the passage of the foreign body.

When I first examined his throat, on February 6th, inspection with the mirror revealed nothing but a partial œdema of the laryngeal mucous membrane, and inability of the vocal cords to adduct properly. An attempt to pass the smallest œsophageal sound was fruitless, as it was arrested at a point about eight inches from the central incisors, or a little below the cricoid cartilage.

The measurements of the œsophagus at the cricoid cartilage vary according to the height of the individual—from 14 to 20 mm. in the antero-posterior diameter, and from 18 to 25 mm. in the transverse diameter, the tube being in this locality somewhat elliptical in shape, Comparing these measurements with those of the tooth-plate exhibited, it will be seen that the œsophagus is here smaller than the plate, and it would seem impossible for the latter to pass beyond the cricoid, although it did so in fact. That it did not get far beyond this point, however, was due to its being caught in the folds of the œsophagus by the two sharp points of the wings, and becoming securely wedged in this position.

The question of œsophagotomy at once presented itself, but I decided to postpone its consideration, because the history of this operation shows it is attended by a considerable mortality (about 25 per cent.), and because I never resort to any surgical procedure, not immediately demanded, as long as there is any hope of accomplishing the result by other means.

Of course this mortality will probably be much lessened under our present improved antiseptic methods; but the patient was in no immediate danger, and could wait until other measures failed.

The next day I succeeded, after several trials, in passing a slender uterine probe beyond the plate through a small opening on the left side, and followed this by a bougie somewhat larger, about 2 mm. in diameter. Calling to mind the effect of cocaine in contracting swollen and engorged tissues, thereby opening closed passages, I applied a 20 per cent. solution to the locality of the obstruction on cotton attached to the flexible uterine probe. Two or three applications enabled me to pass a bougie 4 mm. in diameter through the opening. In three or four days, I was, by this method of gradually enlarging the opening (whether by dilatation or by pressing the plate to one side, I don't know), able to pass the flexible œsophageal forceps here shown (6 mm. in diameter), the jaws of which open or close like claws as it is pushed out or drawn into the sheath. When I had passed it closed below the plate, I opened the claws to their utmost limit, and by throwing them to the right under the plate and pulling upward, I attempted to dislodge it from its fastenings. Every attempt was followed by bloody expectoration. These efforts were repeated daily, until on February 13th, I was satisfied that I had loosened and turned the plate partially over, as I could pass the forceps with more ease. As I could not, however, grasp it with the claws, I introduced a bristle probang with bulb 7 mm. in diameter; and spreading the bristles, gave it a quick jerk which succeeded in lifting the plate above the cricoid where it lodged for a few moments before being ejected by the patient, who had bent over with his head on the floor to prevent an attack of threatening suffocation. This successful result was most gratifying, as it did away with the necessity of operating, which would have been otherwise imperative, because of the dangers attending the presence of such a foreign body in the œsophagus.

Recorded cases show that deaths have occurred from ulceration, abscess, stricture, perforation of the œsophageal wall and neighbor-

ing vessels, perforation of the pericardium, and of the pleural cavity, and from caries of the vertebræ—all these results of foreign bodies in the gullet. That it might have become encysted, is evidenced by McLean's case (*N. Y. Medical Record*, 1884), where a tooth plate had remained in the œsophagus ten years before an operation was performed. Œsophagotomy was done because of emaciation, regurgitation of food, etc., and the whole of the plate, which was $1\frac{1}{2}$ by $1\frac{1}{4}$ inches, was encysted except the point of one wing. It was removed, but the patient died.

Even if such a body became encysted, thus obviating any immediate serious consequences, fatal stricture must result sooner or later.

The case exhibited shows that it is best to defer surgical interference until we are satisfied of the locality of the foreign body and that it cannot be otherwise extracted.

Savitsky reports an amusing case of an œsophagotomy, done for supposed impaction of a tooth plate in the œsophagus, in a patient who waked up from a nap, found his teeth gone, thought he had swallowed them, and developed all the symptoms of impaction, even including an apparently impermeable obstruction and great pain. As no tooth plate was found in the œsophagus, he was told that it had passed into his stomach, when at once all his symptoms were transferred to that organ. They all disappeared, however, when the servant produced the teeth which she had found under the lounge on which he was sleeping.

I have seen nearly similar nervous obstruction of the œsophagus from the supposed presence of a foreign body.

What would have been the result if this tooth plate had passed into my patient's stomach, I can't say. Cases of death from traumatic enteritis are on record from such causes; but there are three recoveries published—one by Palmer, 1881, another by Davies in 1882, and a third by Cant, 1886 (all in the London *Lancet*), in which tooth plates which had been swallowed, were successfully evacuated by the bowels.

200 *East Franklin St.*

Mrs. Miller, of Pittsburg, Pa.,

A wealthy, charitably disposed lady, who died recently, bequeathed a valuable tract of land in Pittsburg, and a sum of money—nearly $300,000, all told—for the purpose of erecting a hospital for women.

APPENDICITIS: ITS DIFFERENTIAL DIAGNOSIS.*

By HUGH M. TAYLOR, M. D., Richmond, Va.

Professor of Practice of Surgery, University College of Medicine; Surgeon to Virginia Hospital, etc., Richmond, Va.

Gentlemen: While this little girl is receiving the finishing touches in the preparation for an appendectomy, I wish to call your attention to some cases, recently inmates of this hospital, which illustrate the difficulties in making a correct differential diagnosis between appendicitis and other morbid conditions in the right half of the abdomen and pelvis.

Typical appendicitis should be as easy to diagnose as typical typhoid fever, typical pneumonia, etc. Unfortunately, we meet with a good many *atypical* appendicular inflammations. Appendicitis and its sequences afford a number of surgical surprises. A perinephritic, perihepatic, subphrenic, mediastinal or pleuritic infection may have as a focus of infection a post cæcal cellulitis, a product of appendicitis. While lumbar, iliac, prevesical, inguinal, scrotal or gluteal abscess may take origin from the same source, I have no doubt many of the psoas, lumbar and iliac abscesses of the past were really post cæcal appendicular suppurations. Recalling the continuous sheet of post peritoneal connective tissue, an explanation of the possible wide range of post cæcal abscess is apparent.

Atypical manifestations of appendicitis are by no means unique occurrences even when the focus of the trouble is limited to the appendix. Classical symptoms may exist, but many cases would go unrecognized if such symptoms only were relied upon. I have seen a gangrenous appendix, with normal temperature, little or no increase in the pulse rate, and nothing suggestive in the facial expression of the serious malady. An abscess—extra or intra appendicular—may exist with no pain or other manifestations of appendicitis. No muscular rigidity and with seemingly a perfect condition of health.

A case in point was seen a few weeks ago with Dr. Virginius Harrison. The young man was supposed to have a sub acute attack of appendicitis. Dr. Harrison had previously attended him in several mild attacks. The night before the beginning of his last attack, he skated until eleven o'clock at night. He was taken with pain at four o'clock in the

*A Clinical Lecture in the Virginia Hospital before the Class of the University College of Medicine, Richmond, Va.

morning; was brought to the hospital that day and a section revealed an appendix buried in an exudate containing a teaspoonful of creamy pus. Evidently an old abscess which had formed in some of his previous attacks (all sub-acute) and which had been carried around without inconvenience, perhaps, for months.

A few months ago I operated in this room on a man whose abdomen I could kneed and manipulate in every direction without eliciting pain, or other evidences of appendicular trouble. He was a splendid picture of physical health, and I said to him it looks like a shame to operate on you. For years he had been treated for gall stones; he may have had gall stones, but when I first saw him (a few months before I operated), he was recovering from a mild attack of appendicitis, evinced by an appreciable lump in the ileo-cæcal region. There was no pain or other evidences of appendicitis appreciable at the time of the operation, but on section I found an appendix buried in an exudate, and a small, well circumscribed abscess in the exudate.

What do I expect to find in the little child I am now going to operate upon? I think it a simple case. I attended her through a sharp attack two years ago. She had another less severe attack a few weeks ago. It is an interesting point to know the most favorable time after an attack for operative interference. I think from three to four weeks, as in that time congestion will be relieved and the adhesions will not have firmly organized. I hope this is a simple case, but we have no means of knowing save through an exploratory incision.

Mr. Treves emphasizes the fact, and it is common experience, that *one attack may do great damage in the matter of adhesions, while few, if any, may be found after a dozen attacks.* Gross morbid changes in the appendix, *i. e.*, gangrene, perforation, and extensive adhesions may exceptionally be attended by but little elevation of temperature, change in the pulse rate or other evidences of appendicitis. On the other hand, I have seen slight local change in the appendix attended by the manifestations of virulent ptomain absorption and poison. In other words, I have seen an excessively high temperature and rapid pulse and profound toxæmia, with insignificant-looking macroscopical changes in the appendix. These erratic manifestations are the exceptions, not the rule; they characterize the atypical—not the typical cases. An explanation of such behavior is theoretical only. A phlegmon in the cellular tissue (a boil), in one case, will give rise to chill, fever and marked constitutional disturbance; in another, only local discomfort exists This difference has something to do with the virulence of the ptomain generated, its absorption, the resistance to absorption, or its rapid elimination.

This point was markedly illustrated in a case seen some time ago in consultation with Dr. Edward McGuire. A displaced kidney gave the impression of an appendicular tumor in the ileo-cæcal region, while a temperature of 104° and pulse of 140, led us to suspect gross morbid lesion. The presence of so marked a tumor in the beginning of a first attack, and especially with symptoms pointing to the fulminating type, should have aroused our suspicion. A section revealed an appendix distended and infected, but it was hard to realize that such profound systemic disturbance could ensue from such slight local lesions.

In striking contrast with this, is the common observance of extensive adhesions, perforation, abscess formation, or necrosis molecular or *en masse* with sub-acute symptoms.

A feature, always a source of anxiety, is a *disproportionate effect upon the pulse and temperature.* A nearly normal, or, still worse, a subnormal temperature and rapid pulse, in the absence of neurotic influences, is always a matter of concern.

Why profound toxæmia should sometimes affect the cardiac center more than the thermic, I do not know. I can only give it as a well attested clinical fact.

Stereotyped cases of appendicitis are distressingly common, and, admittedly, are the most important of the many morbid conditions occurring in the abdomen or pelvis. Its *frequency* is indicated by statistics which show as revealed by post mortems, that from 33⅓ to 80 per cent. (variously estimated) appendices bear the relics of appendicular inflammation, *i. e.*, some adhesion, stenosis, scar tissue, etc. Of course no such proportion of mankind present clinical evidence of appendicitis. A distinguished surgeon sometime ago began an address on appendicitis by stating that there was no one in the large audience before him who had not lost, not some patient, but some relative or friend, from appendicitis. I can recall two deaths in my own family from appendicitis before I entered the profession. Its dangers in the past are more accurately surmised by including some of the deaths credited to inflammation of the bowels, peritonitis (so called idiopathic), obstruction of bowels, lumbar, psoas, iliac and pelvis abscesses.

The typical case of appendicitis, acute, subacute or relapsing, presents *a clinical picture* so

clearly portrayed that it should not often be wrongly interpreted The sudden onset of diffused pain, reflex in character, soon followed by local tenderness at some point within the circle with the appendix as a radius. Vomiting (temporary), rigid right rectus muscle, with slight fever and rapid pulse, are classical symptoms, as a rule, characterizing acute appendicitis.

What morbid conditions other than acute appendicitis may *present a similar clinical picture*, or one sufficiently so to be very confusing?

Acute Ileus.—Appendicitis is a not infrequent cause of acute ileus. Plastic peritonitis, matting and angulating the bowels, may cause acute ileus; septic or suppurative peritonitis, with intestinal paresis and obstruction, is a not infrequent sequence; while the formation of adhesions and their ultimate contraction may eventually cause acute ileus. An interesting case, attended in consultation with Dr. Irving, has recently left the hospital. The young man was suddenly taken with violent and persistent vomiting, shock, pain, rigid abdominal muscles, obstinate constipation, rapid pulse and soon some febrile reaction. Palliative treatment was persevered in for forty eight hours—an error (but one for which we were not responsible) in the conduct of a case of acute ileus. A section showed fibrino-plastic peritonitis—*i. e.*, some serum in peritoneal cavity and flakes of lymph quite extensively sticking to the coils of intestines. A pencil-like band was found encircling and constricting the ileum about six or eight inches from the ileocæcal valve. This band was incised, peeled off the intestine and removed. As the patient was not in good condition, and as we had discovered and removed a sufficient cause for the ileus, nothing more was thought called for except to wipe off the flakes of lymph and to sponge the cavity free of fluids. The abdomen was closed, without drainage, which, in view of the existing peritonitis (plastic) and its subsequent behavior, was undoubtedly a mistake. Beyond some abdominal distension lasting a week, and difficulty in securing a movement of the bowels because of the partial bowel paralysis, the recovery was uneventful.

In time the patient returned to his work (telegraphy), but in a few weeks he was again in the hospital with another attack of acute obstruction. A section promptly resorted to disclosed massing and matting of bowels on the right side of his abdomen—again mechanic ileus from adhesions. Fortunately the bowels were not very firmly agglutinated, and with care several feet were untangled, with here and there considerable laceration of the peritoneal investment. Drainage (gauze) was used, the patient again made an uneventful recovery without, so far, indications of recurring adhesions.

The band encircling the ileum and causing the obstruction in the first instance was probably the remains of the appendix. On examination the cæcum was found to be uninvolved, but it was minus its appendix.

While this case in its incipiency presented some of the symptoms common to an acute appendicitis, a close analysis enabled us with reasonable certainty to diagnose, prior to a section, the nature of the morbid lesion. In the first place, he recalled having had an attack six or eight years before, attended with pain, etc. (called inflammation of the bowels), which lasted him ten days or two weeks, and since that time he has suffered with persistent torpor of bowels, and, as he expressed it, "has had to increase constantly and take persistently purgative medicine. Six or eight years ago he probably had appendicitis. The appendix wrapped itself around the ileum; gradually contracted until the ileum became sufficiently constricted to block its lumen. By limited necrosis at the time of the attack of appendicitis, or by the constant traction of the moving bowel, the cæcal attachment of the appendix was separated.

A history of appendicitis with subsequent persistent constipation, exaggerated peristalsis at first, mechanical distension prior to local or general peritonitis, incessant vomiting, early constipation prior to peritonitis and diminished peristalsis and profound shock and pain, antedating fever, etc., were suggestive differential points in favor of acute ileus, or rather chronic ileus, suddenly becoming acute in type.

I have at this time under my care a young lady who has been for years a great sufferer from constipation and gaseous distension of the bowels. She reports having had a prolonged attack of intra abdominal trouble six or eight years ago. The trouble was largely focused on the right side. It was not diagnosed appendicitis, but I have no doubt it was appendicitis, and I have no doubt adhesions then formed are responsible for her present trouble.

I think appendicitis long forgotten is not infrequently, through adhesions, responsible for acute ileus, or rather for chronic obstruction, which may suddenly become acute.

Gall Tract Obstruction and Its Sequences.—A typical case illustrating some of the difficulties attending a differential diagnosis,

was some time ago an inmate of this hospital, and was seen with Dr. W. H. Parker. The case was admitted as one of circumscribed appendicular abscess. A sickness of several weeks, attended by fever, sweats, emaciation, rigid right rectus muscles, pain, swelling, etc., with a history of previous attacks, was suggestive of appendicular trouble. Relaxation of the rigid and painful abdominal muscles under an anesthetic enabled us to outline a pyriform tumor extending from the under surface of the liver to the ileo-cæcal region, and suggested an *empyæmic gall bladder.* A section confirmed this diagnosis.

Other morbid conditions of the gall tract may present symptoms not unlike those incident to some one or all of the types of appendicitis. A *cholecystitis with involvement of the peritoneal coat* of the gall bladder and adhesion of bowel or omentum, or both, to it, may exceptionally give rise to pain, tumor, muscular rigidity, fever, etc., simulating subacute appendicitis, while a perforation without protecting adhesion, or gangrene may induce symptoms from intra-peritoneal effusion—*i. e.*, shock, etc , strongly suggestive of acute appendicitis. This is better appreciated when we recall the fact that a distended gall bladder or elongated cystic duct may bring that organ nearer the usual appendicular site, and the fact that the appendix may exceptionally point upwards towards the under surface of the liver and the pain, etc., of appendicitis be focused quite a distance from McBurney's point. As a rule, however—certainly in the last stages of gall-bladder inflammation—local pressure over the site of that viscus should elicit local pain, which designates to some extent the nature of the lesion, and muscular rigidity to a more marked extent involves the upper part of the right rectus muscles.

The acute manifestation of *the passage of gall stone*, viz., pain, vomiting, muscular rigidity, acceleration of pulse and cessation of peristalsis, may for a time simulate appendicitis or the so called appendicular colic. The intensity of gall-stone colic, persistent vomiting, paroxysmal character, radiation of pain upwards, early appearance of jaundice if there is common duct obstruction, no fever unless there is cholangitis or local peritonitis, should, as a rule, be sufficient guides, especially if associated with a history of previous attack of cholelithiasis.

The fact should not be lost sight of that *appendicitis and gall tract suppuration or inflammation may exist* or occur even as a sequence of each other.

Tubo-Ovarian Disease.—Cases illustrating the similarity of symptoms manifested by tubo-ovarian disease and some one of the several types of appendicitis are of frequent occurrences. Recently several such cases have been in the hospital. Two especially, seen in consultation with Dr. Virginius Harrison, are good illustrations. One of them, a young girl with a history of previous attacks, after several days presented a clinical picture of fever, rapid pulses, rigid recti muscle pain, etc., and a distinct tumor in the ileo cæcal region, but *suspiciously near Poupart's ligament, the median line and pubic crest.* Its site, of course, did not preclude appendicitis, as a long appendix, a long mesocæcum and necrosis at the distal end of a long appendix pointing downward and inwards towards the median line or downward into the pelvis could have formed a mass so situated. As the girl was only eighteen, and as there was no suspicion of specific infection, an examination per vaginam was not made until she was anesthetised for a section. The result of the examination then made revealed the fixed uterus and blocked pelvis. A section disclosed bilateral sausage shaped pus tubes, matting of bowels and adhesion of appendix to tube and bowel on the right side. The inference entertained at the time was that the infected tubes were the first step in the morbid changes.

A second case was a continuation of an inspection incident to parturition. As there was a history of previous attacks it was not clear whether the puerperal infection started in the utero-vaginal tract or primarily in the pelvis from an exacerbation of a pre-existing appendicitis. A blocked pelvis, fever, pain, rigid muscles, emaciation and tumor nearer Poupart's ligament and pubic crest than in the ileo-cæcal region gave rise to the suspicion of puerperal infection from without. A section confirmed this suspicion, although the matting of tubo-ovarian structures, omentum and bowel, especially the cæcum, was so complete that it was hard to tell where the primary focus was located.

Two other cases now in the hospital may be mentioned. One was seen with Dr. Edward McGuire and the other with Dr. Irving. In Dr. McGuire's case the prominent symptoms were those of subacute appendicitis. A section revealed an adherent appendix, adherent and enlarged right ovary and some perinephritic inflammation. Dr. Irving's case would probably have been before you to-day for operative interference but for the fact that there is a slight improvement in her symptoms, and she

is in poor condition for a surgical operation. The history of her sickness for two or three weeks prior to her admission to the hospital is rather vague. Typhoid fever was suspected; then appendicitis. On examination per vaginam her pelvis was found filled with an exudate and the uterus was fixed. A mass could be felt especially between the pubic and ileo cæcal region, but to some extent also in the left side. Two especially ugly features in her case, more marked a few days ago, were excessive vomiting and considerable tympanites and bowel torpor. At first it was suspected that the vomiting was due to sepsis; it may have been due to mechanical ileus from adhesion, or from pressure of the exudate, or reflex from pelvic inflammation. I have no doubt the case is of tubal origin, and I think it likely we will find the appendix also involved.

In making a positive diagnosis in this case, I am reminded that the man who makes positive diagnoses in intra-abdominal lesions, will, on section, quite often find himself mistaken.

The frequent co existence of appendicular and right tubo-ovarian infection is a matter of common observation. Only an anatomical explanation has been offered, and that pre-supposes the existence of the appendicular ovarian ligament of Clado. The uniform existence of this process of peritoneum, containing lymphatics and blood vessels, would easily explain an infection of the appendix from tubo-ovarian trouble or infection of the tube and ovary from a focus in the appendicular region.

The existence of this ligament is also held to explain *why appendicitis is more common in the male, i. e.*, the additional blood supply through the appendiculo-ovarian ligament comes to the rescue in woman when the feeble appendicular circulation is threatened.

Right ovary or tube or both bound down by adhesions, or anchored in such a way as to flex the blood vessels or lumen of the tube, may give rise to acute pain, simulating, at first, the acute pain of appendicitis, or the persistent sub-acute pain of chronic appendicitis. Especially in neurotic subjects will such manifestations be marked.

Phantom Appendicitis.—Since the publicity given appendicitis in the daily papers, we meet with many people who have *appendiculo phobia.* Recently I have had two patients in the hospital victims of phantom appendicitis. One, a man with central and not abdominal lesion, focused his suffering in his ileo-cæcal region, and implored me to operate on him at once and not let him endure the agony of another night. There was nothing to justify the impression that there was the slightest trouble in the appendix. The other case was a neurotic young woman. While not indicting her appendix specifically, she focused her suffering and the cause of her long invalidism, which had continued for years, so accurately in the ileo-cæcal region, that I had to anesthetize her in order to be sure there was no abdominal or pelvic trouble. Complete restoration to health —a result of the Weir Mitchell rest-treatment— sustained the diagnosis of neuræsthenia.

Tubal Gestation.—The shock and pain incident to ruptured tubal pregnancy, may, for a time, simulate an acute appendicitis. In addition, as in a case I once met with, the slight tumor and persistent pain may be misleading.

Twist of the Pedicle of an Ovarian Tumor.—The clinical picture presented by an acutely-twisted pedicle of an ovarian tumor may not be unlike that incident to acute appendicitis. A few years ago I had an opportunity of seeing such a picture from a twist in an orange sized tumor. Profound shock, persistent vomiting, intense pain and rigid abdominal muscles were prominent from the first, while the symptoms incident to septic peritonitis quickly developed. That such a train of symptoms might awaken a suspicion of appendicitis is not surprising.

Typhoid Fever.—When atypical, its sudden onset, tenderness in right iliac region, temperature elevation, increase of pulse rate, etc., are at times quite confusing. I am quite sure in the past I have treated chronic appendicitis for atypical typhoid fever, and think it more than probable that some of the deaths credited to perforation from typhoid should be traced to infection from the appendix.

Recently I attended in the hospital a case with Dr. Wm. Gordon, in which many of the atypical symptoms of typhoid fever were presented. We were not mislead in the case, because Dr. Gordon had attended him in an attack of appendicitis six or eight months prior to his admission into the hospital. On making a section we found matted bowels and pus, and the appendix surrounded by a mass of exudate.

Intestinal Indigestion —Not a few cases of appendicitis have been treated for intestinal indigestion, and quite often an acute appendicitis inflammation is engrafted upon one that has been so sub acute as not to excite suspicion until the acute exacerbation. Many of you will recall the sad event which cast a gloom over this college and community year before last, when St. George Bridges lost his life from fulminating appendicitis. For months he had been hard at work competing for the prize of

fered for the best paper on appendicitis. For months he had been suffering with supposed intestinal indigestion. I have no doubt that the dynamite which exploded and killed this talented and lovable young man, had been in existence for months. Only a few weeks ago his young brother walked into my office and gave me a history of frequent attacks of intestinal pain, etc. The attacks were slight, and rarely lasted more than a few days; he was just recovering from one. On palpation I could appreciate a lump in the ileo cæcal region. A section revealed an enlarged and elongated appendix, but no exudate. The section was made ten days subsequent to the first examination. He is now a convalescent in the hospital.

Many cases finally developing into well-defined cases of appendicitis, furnish a history of *obscure gastro enteric disorder*, not infrequently misnamed intestinal indigestion.

Impaction of the Cæcum.—A tumor in the ileo-cæcal region, gastro-enteric disorder, perhaps pain incident to catarrhal cæcitis and fever from stercoræmia, may complicate the diagnosis, provided the history of the case does not make it clear that the existence of the tumor antedated the manifestations of fever, pain, etc.

Nephroptosis with Dietl's or Renal Crisis.—This condition, occurring on the right side, as it usually does, may present symptoms at first simulating appendicitis, viz., a tumor, pain, vomiting, muscular rigidity, perhaps a cessation of or sluggish peristalsis and persistent pain after a cessation of the acute attack. Nephroptosis occurs more frequently in women; appendicitis is more common in men. Moreover, a flexed ureter, the cause of the renal crisis and distention of the ureter and pelvis of the kidney, as in nephrolithiasis, is usually accompanied by evidences of vesico-ureteral disorder.

More than once I have had misgivings as to appendicitis in the incipiency of an attack of *right kidney colic*, and confusing symptoms may be presented by *hydro- or pyo-nephrosis* and a *sacculated ureter*, in spite of evidences furnished by the history, chemical analysis or ureteral catheterization.

Ileo-Colic Invagination—May at first mislead by the symptoms manifested. Mr. Treves cites an instance occurring in a child, in which rectal tenesmus, etc., led him to diagnose intussusception; but much to his surprise, on making a section the only morbid lesion found was a necrotic appendix.

An *enterolith lodging in the ileo cæcal region* may also give rise to confusing symptoms.

Fortunately, many of the acute intra abdominal and pelvic troubles we have mentioned, call for prompt operative interference. You had better operate too early and too often, than too late. Ideal surgery is that which seeks to prevent the disastrous consequences incident to intra abdominal lesions. We limit the amount of surgery called for, and save life by early surgical intervention.

6 *North Fifth St.*

TWO CASES ILLUSTRATING THE VALUE OF THE X-RAY AS A MEANS OF DIAGNOSIS.

By STUART McGUIRE, M. D., of Richmond, Va.,

Professor of Principles of Surgery, University College of Medicine, etc.

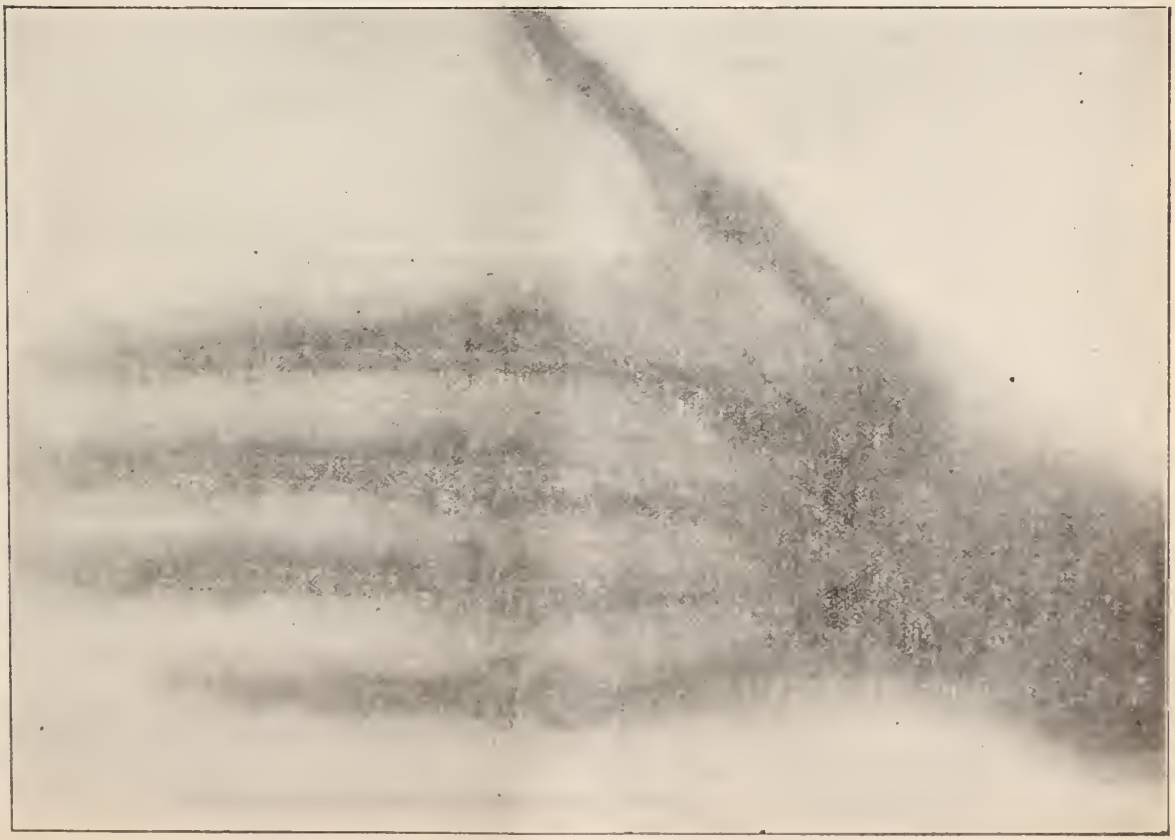
The two accompanying illustrations speak for themselves.

One is the elbow of a gentleman that had been dislocated for two weeks and had resisted four different attempts at reduction under chloroform by competent surgeons.

The other is the hand of a woman that contained a piece of broken needle which the most careful and systematic examination had failed to localize.

From the information furnished by the "shadographs" the dislocation was easily reduced, and the needle was readily removed.

The X-ray machine is as much an office instrument as the stethoscope. Personal experience has demonstrated that it can be successfully operated without a technical knowledge of either electricity or photography.



Proceedings of Societies, etc.

RICHMOND ACADEMY OF MEDICINE AND SURGERY.

Regular meeting held February 22, 1898, Veteran Hall, 514 516 East Broad street.

Dr. M. D. Hoge, Jr, in the chair. Dr. Mark W. Peyser, Secretary and Reporter.

Dr. John N Upshur read a paper on

Fatty Liver, with Report of a Case. [See page 702.]

DISCUSSION.

Dr. Thos. J. Moore said the liver is an organ whose functions are but little understood. It was a great deal better to pay attention to the liver in its natural condition, and with regard to this, text-books are often misleading. The position of the line of the liver depends upon several circumstances—an important one being the age; and another, sex of the patient. It is well to ascertain the position of the left lobe and its relation to other organs, as the heart and diaphragm. The position of the fundus of the gall-bladder should be discovered, and a most important relation was the pyloric end of the stomach. Keeping all these points in mind, a proper diagnosis as to whether the liver was enlarged or not might be reached. There have been made a number of classifications of diseases of the liver, as smooth and nodular, painless and painful, etc.; but there were only three conditions as a rule producing dropsy: (1) waxy degeneration, 12 to 18 months after development; (2) cancer of liver; (3) all cirrhotic forms. It was patent that it could occur in any condition interfering with the portal circulation; and it was needless to say that fatty degeneration of the liver was usually secondary. Generally, it was found that other organs were likewise affected. The disease might consist of a mere deposition, or infiltration of fat, accompanied by fatty heart, and later fatty kidney shown by change in the quantity of urine, and the appearance of granules, casts, etc. The pathological condition proper, was that of other diseases, as anæmia; various cachexia, as syphilis; alcohol, in extreme degrees, as delirium tremens; cancer; degenerations even in positions other than the liver, as the ulcer of the stomach; and congestion producing intense indigestion. It might arise from any exhausting disease, as in the later stages of phthisis, when there was interference with proper oxidation, or any state having this condition.

The liver (fatty infiltration) was always smooth, and in the thin subject, it shows and is soft, differing from waxy degeneration. The lower border might reach as far as the umbilicus and was rounded, differing from the sharp outline of the natural liver. On percussion, it is found that dullness commences about the fourth intercostal space and extends far down below the anterior border. There might be interference with the sound on account of gas in the bowel, or dilatation of the stomach, giving a mixed dull-tympanitic. General constitutional symptoms are not peculiar to fatty degeneration. In extreme obesity from excessive eating, combined with indolence, there was a tendency to it with robust congestion, feeble heart, pulse wavering, frequent and small. In anæmic people, there were the peculiarities of anæmia; so in phthisis, the termination of which was hastened by the degeneration, although the latter was a slow disease. Cancer gallops, and wherever located, gave a definite downhill history. In all wasting diseases, and in the last stages of Bright's, fatty degeneration would be found. The lymphatics and veins appear to take up the fat and carry it to the liver, which standing guard in the pathway of the stream, interfered and stored it up, the other tissues being, therefore, poor in it.

Treatment depended on the cause. Dr. Upshur found the kidney at fault, and properly treated it Fatty liver did not produce dropsy. In extreme fatty degeneration, when there is pressure on the ascending vena cava, there might be dropsy, but it is not the rule In phthisis, with fatty degeneration, beware of the oils, as cod liver oil. We must appeal to the vascular and nervous systems, and treat the infection. With dyspeptic symptoms, get rid of flatus and diarrhœa. While bile seemed to be secreted during the disease, it was not properly poured out into the bowel; therefore the clayey feces. A certain number of cells remained healthy always, and they acted and were acted upon. Therefore, always endeavor to regulate the bowels by mercurials. With ulcer of the stomach, besides treating the immediate trouble, correct, also, intestinal affections.

If, for any cause, ferruginous preparations were necessary, it was well to employ the milder forms; use the citrate. Bicarbonate of sodium acts well here, and also in treating the kidneys. The alkaline salts were especially advantageous.

In concluding, Dr. Moore said the subject was one practically tabooed by the text-books, and the symptoms must be gathered in order to make a legitimate diagnosis.

Dr. E. C. Levy said that in making the post-mortem examination, it was found that the liver was somewhat enlarged throughout, and microscopic examination showed an increase in fibrous tissue which probably interfered with the portal circulation. There was really a fatty infiltration, the changes being around the periphery of the lobules and not the centre. The kidneys and spleen were normal, and these with the liver, were the only organs examined microscopically. The heart was not examined. He was of Dr. Upshur's opinion, that the cause was certainly anæmia. A peculiar thing was that no place could be found to account for the blood in the pelvis.

Dr. H. Stuart MacLean asked Dr. Upshur if he did not think it more probable that the anæmia produced a fatty metamorphosis of the cells themselves, rather than that the anæmia was due to the degeneration?

Dr. Upshur said that was his idea. He was free to admit, that looking at the case from a pathological view-point, the chest and contents should have been examined. This was not done because the remains had to be carried from the city, and the time was limited; and because there were no symptoms pointing to the chest, although judging from the pulse, there may have been some change in the heart muscle.

Reports of Cases.

Nearly Complete Anuria in an Infant—Later, Perforating Ulcer of Lip.

Dr. Jacob Michaux reported the case of an infant delivered on January 1, with artificial aid. It was very feeble, and, with difficulty, kept alive. It was discovered that it was passing no water, and on the fourth day a probe was passed, the urine passing being not much over a tablespoonful, but the relief ensuing evidently great. The child rallied and progressed better. At the time of delivery, which was effected with care, there was no injury, except a couple of very slight abrasions of the forehead.

In a week, the abrasions having healed, and the child gaining strength (it was artificially fed), a peculiar red blush appeared on the lower lip looking much like a congenital "mother-mark." It had not been noticed earlier than this time, and he concluded this was because of non-distension of the vascular system. About the end of a month, he was hastily called, and found considerable hemorrhage from an ulcerating surface of the lower lip, about one-third across the free margin. The ulcer continued in the structure of the lip, perforating, and descending to the groove in which the teeth were to appear. At this time there was a dark-looking crust on the outer aspect, and graying at the top. The ulcer had not extended throughout the surface marked by the peculiar vascularity. He had not made a diagnosis. At first, there was a suspicion of malignancy, but it was dismissed. There was absolutely no foundation for a syphilitic history, the father and grandfather and mother being entirely free from it. No treatment was applied at the first appearance, and there had been no constitutional treatment, because he did not know what to treat.

Local measures used at this time, consisted of lysol solution and benzoated zinc ointment. He asked for enlightenment.

Dr. A. Jordan said it could not be malignant in character because the pathologic process involved required a long time, whereas the development here was very short. He was of the opinion it was a macular syphilide. Sometimes the latter was so slight, that it was found with difficulty. Careful examination would reveal enlarged glands under the chin and in the neck on the same side. On account of emaciation and lessened vitality, the disease had made more progress than was usual. If antisyphilitic treatment did not cure, then there was no syphilis. He would advise constitutional treatment; and also very cautious use of lysol, which was too stimulating. Protective means were better, as bismuth or calamine.

Dr. MacLean enquired if it were cancrum oris?

Dr. Upshur thought it was cancrum oris, or there was some inoculation during delivery, with pyogenic germs, abscess first forming followed by the phagedenic ulcer. He was not inclined to the syphilitic theory, as the child would have had snuffles, and there was no syphilitic history.

Dr. Michaux said he had thought of cancrum oris, but was obliged to dismiss the view. In reply to the syphilitic theory, he said there was absolutely no family history of it, and also, there was no glandular involvement.

Dental-Plate, with Central Incisor Attached, Impacted in Œsophagus Three Months—Removed per Vias Naturales.

Dr. Joseph A. White presented the patient, and reported the details. [See page 703.]

Dr. Upshur reported a case occurring in the practice of a physician with whom he had been associated. The girl had swallowed a cent which lodged in the œsophagus. There was no attempt to remove it, and she was sent to her home in the country. In a week, she was dead, the penny having sloughed into the aorta, setting up fatal hemorrhage.

Dr. H. H. Levy reported two cases.

CASE I.—A child said to have swallowed a five cent piece and reported unable to swallow food. He asked that a cracker be given her, which she ate and swallowed. The next day he was sent for again, as deglutition could not be performed, but it was as before. This continued for several days, when, in desperation, he responded, prepared to operate, and succeeded in withdrawing it. He was of the opinion that the coin hung like a pivot, allowing, at times, small particles of food and drink to pass, and then swinging so as to occlude the channel.

CASE II had swallowed a penny whistle, which, although it could not be felt, he was convinced was in the œsophagus, because the patient could not swallow and was growing emaciated. The case was turned over to Dr. John Dunn, and the x ray was used, but not satisfactorily, because of the proximity of the vertebræ, although it was thought that a rounded body could be seen. An unsuccessful attempt was made to deliver, and another was about to be made, when there was evidence that the obstruction had passed into the stomach.

Dr. Jordan reported a case seen in a dispensary clinic, which had swallowed a dental plate with teeth. Doses of chloroform were given, which succeeded in dissolving the teeth from the plate, and, eventually, the plate itself.

Dr. White said this case ought to go on record, as only three cases were known in which the plate passed out. There have been instances in which the plate passed into the intestines, setting up enteritis, followed by death.

Dr Upshur could not understand how even full doses of chloroform could have dissolved the plate, unless it was macerated in it, and the violent burning would have been unbearable. Also, the anæsthetic effect should have been manifested, as chloroform vaporizes readily in the stomach. It was a dangerous experiment. A useful recourse, when the body has been swallowed within three hours after a meal, was the hypodermic injection of apomorphine.

SOUTHERN SECTION OF THE AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY.

Meeting will be called to order in Atlanta, Ga., March 28th, 1898, at 10 A. M., in Ball-room of Kimball House. All hotels will give reduced rates. The Profession is cordially invited. Dr. Dunbar Roy, of Atlanta, Ga., is Secretary.

The following is the preliminary program:

Dr. A. W. Calhoun, Atlanta, will deliver the address by the chairman.

Other papers will be:

Labyrinthine Vertigo, Dr. John Hey Williams, Asheville, N. C.

Chromatic Audition, Dr. J. L. Minor, Memphis.

Case of Hemorrhage after Removal of Adenoid Vegetations, Dr Ross P Cox, Rome, Ga.

Hypertrophy of Lingual Tonsil, its Symptoms and Treatment, Dr. D. A. Kuyk, Richmond.

Thrombosis of Lateral Sinus, Dependent upon Suppurative Otitis Media, Dr. E. B. Dench, New York City.

Othæmatoma and Perichondritis of Auricle, Dr. John O. McReynolds, Dallas, Texas.

Tracheotomy for Foreign Bodies in the Air Passages. Report of Twenty seven Successful Cases, Dr. Willis F. Westmoreland, Atlanta.

Empyema of the Accessory Nasal Cavities, Dr. Ruffin A. Wright, Mobile.

Influence on Development of Nervous System of the Child by Adenoid Vegetations in Naso pharynx, Dr. E. P. Sale, Memphis.

Nasal Fibromata, with Report of Cases, Dr. L. M. Crichton, Atlanta.

Importance of Examining the Nose in Troublesome Coughs, Dr. Alfred C. Palmer, Richmond.

Intubation of Larynx for Membranous Stenosis, Dr. Bernard Wolff, Atlanta.

Mouth Breathing, Dr. Norburne B. Jenkins, Knoxville.

Mental Disturbance in Turbinate Hypertrophies or Nasal Stenosis, Dr. John F. Woodward, Norfolk.

Discovery in Physiology of the Ear, Dr. W. F. Cole, Waco, Texas.

Middle Ear Catarrh; Some Original Deductions, Dr. Maury M. Stapler, Macon, Ga.

Ethmoiditis, Report of Case, Dr. B. F. Travis, Chattanooga.

Mastoid Inflammation, Report of Two Cases, Dr. T. E. Mitchell, Columbus, Ga.

Mouth Breathing in Children, Particularly as Due to Adenoids, Dr. Arthur G. Hobbs, Atlanta.

Nasopharynx in Laryngeal Diseases, Dr. N. C. Steel, Chattanooga.

Cholesteatoma of Mastoid Antrum, Dr. S. L. Ledbetter, Birmingham, Ala.

Diseases of Accessory Sinuses, Dr. Alex. W. Stirling, Atlanta.

Clinical Miscellanies, Dr. Frank M. Mullins, Ft. Worth, Texas.

Empyema of Accessory Sinuses of Nose, Dr. Frank M. Hanger, Staunton, Va.

A Good Hæmostatic after Nasal Operations, Dr. L. B. Grandy, Atlanta.

Hypertrophic Rhinitis and its Treatment, Dr. J. F. Hill, Memphis.
Serum Treatment of Ozena, Dr. W. E. Campbell, Atlanta.
Peritonsillar Abscess, Dr. Dunbar Roy, Atlanta.

QUARANTINE CONVENTION OF SOUTH ATLANTIC AND GULF STATES.

The Quarantine Convention of South Atlantic and Gulf States was held in Mobile, Ala., February 9–11, 1898. The health officer of Mobile, Dr. W. H. Sanders, was the originator. About 150 lawyers, business-men and doctors, named in the order of their respective numbers, composed the convention of representatives from the States, health and municipal authorities, commercial bodies, railroad and steamboat companies, etc.

Dr. C. P. Wilkinson, Louisiana, was made permanent chairman; Dr. H. A. Moody, Mobile, permanent secretary.

The practical result of the Convention can be summarized (*N. O. Med. and Surg. Jour.*, March, 1898,) by the various resolutions introduced, modified and finally adopted, as follows:

I. *Resolved*, That it is the sense of this Convention:

1. That Congress be requested to provide for a department of public health as soon as practicable.

2. That Congress should enact laws to provide for an efficient marine quarantine, to be uniform and impartial in its application to the different commercial ports of this country so as to give no one, or more of them, undue advantage over the others, to be enforced by the several States and municipal quarantine or health boards, if they will undertake so to do, leaving also to the States the power to prescribe and enforce additional reasonable safeguards of the health of their communities, provided that such State action shall not unreasonably obstruct commerce.

3. That Congress should aid the several States in establishing and maintaining uniform, reasonable and efficient quarantine laws for affecting, but not regulating, interstate commerce, leaving to each State adequate power to protect, as it shall deem best, the lives and health of its people.

4. That Congress should leave exclusively to the States the regulation of their purely internal commerce and the provision of such quarantine and sanitary laws and regulations as they may deem advisable to that end.

5. That, in the framing of quarantine laws and regulations and in their enforcement, Congress should avail itself of the learning, experience and ability of the medical profession in the fullest measure possible, and especially by way of an advisory council.

II *Resolved*, That it is the sense of this convention of the States bordering on the South Atlantic and Gulf Coast, viz.: Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana and Texas, that they should, as soon as practicable, meet in conference and prepare a code of rules and regulations for the purpose of controlling and preventing the spread of yellow fever and other contagious or infectious diseases; said rules and regulations to be uniformly accepted and honored by the several Health Boards of the States mentioned; and further to adopt a system of pratique and health certificates to be used in times of epidemic, to be likewise honored by the several Health Boards of the States named.

III. *Resolved*, That this convention call the proposed meeting of the health and quarantine officials of the South Atlantic and Gulf States to be held in Atlanta, Ga., during the first week in April, 1898; and

Resolved, That the chairman of this convention appoint a committee, to consist of one member from each State entitled to representation, whose duty it shall be to have charge of all necessary arrangements looking to hold the same.

IV. *Resolved* (1), That the Congress of the United States be requested to authorize the President to take such steps, by treaty or otherwise, as may aid in inducing the respective governments of the Inter-Tropical American ports to secure proper and adequate sanitation; together with the adoption by them of such restrictive measures as may be necessary to render such ports in good sanitary condition and to prevent the introduction of yellow fever.

2. To provide for the maintenance of a medical force of this country in each such port, to give warning of the existence of yellow fever therein, with adequate power for the most efficient possible prevention of the communication of the disease therefrom; and that Congress be memorialized to make such appropriation as may be necessary to maintain a proper medical inspection service in Inter-Tropical American ports of sufficient importance to warrant such appointment.

3. That the Congress of the United States be memorialized to make a suitable appropriation

and provide for the early calling of a conference of port sanitary authorities to deal with the subject of international quarantine and preventive sanitary regulations.

V. *Resolved*, That the convention respectfully recommend to the Congress of the United States that the following bill be passed:

Be it enacted, etc.:

Sec. 1. A commission of experts shall be appointed by the President for the purpose of making investigations relating to the cause and prevention of yellow fever.

Sec. 2. This commission shall consist of four expert bacteriologists, one to be detailed from among the medical officers of the army, one from among the medical officers of the navy, one from among the medical officers of the Marine Hospital Service, and one to be appointed from civil life.

Sec. 3. The President shall name one of the members of the commission as chairman, who shall direct the work of the commission and report to him from time to time the results attained. The headquarters of the commission shall be in Washington, D. C., and one or more of the members shall be detailed to conduct investigations in the city of Havana, Cuba, or in some other locality where yellow fever prevails.

Sec. 4. The medical officers of the army, the navy and the Marine Hospital Service detailed as members of this commission shall receive no compensation beyond their salaries. But during the time that they are necessarily absent from their proper stations in the performance of the duties imposed upon them by this act, their necessary living and travelling expenses shall be paid from the appropriation made in this act. The civilian member of the commission shall receive, in addition to his necessary living and travelling expenses, six dollars per day during the time he is actually employed in prosecuting the investigation contemplated by this act.

Sec. 5. The sum of twenty thousand dollars is hereby appropriated, out of any money in the Treasury of the United States not otherwise appropriated, for carrying out the provisions of this act, and for the purchase of necessary instruments and material, for rent of a laboratory in Havana, Cuba, or elsewhere, and for other incidental expenses.

VI. *Whereas*, We are informed that a bill is now pending in the Senate of the United States, known as Senate Bill No. 1063, to regulate the practice of vivisection in the District of Columbia; and

Whereas, By its enactment we feel convinced that the progress of scientific knowledge, especially in the direction of the prevention of disease, would be limited and restricted, if not altogether prevented;

Therefore be it Resolved, That it is the sense of this convention that the passage of the said Senate Bill No. 1063 would be unwise, injurious and prejudicial to the interest of sanitary science, and that the officers of this convention notify the Honorable the Senate of the United States accordingly.

VII. *Resolved*, That the secretary of this convention shall prepare and forward to the members of Congress of the South Atlantic and Gulf States copies of the resolutions this day adopted, duly certified with the signatures of the officers of this convention, and shall request the aforesaid members of Congress to bring the subject matter to the attention of their respective houses; and to prepare and introduce the requisite bills to effect the purpose of the resolutions, and to procure the passage thereof.

Analyses, Selections, etc.

Statistics of Abdominal Section in America.

The following appears to be the copy of a manifold letter from Dr. Lawson Tait, Birmingham, England, under date of December 14, 1897, evidently intended "for whom it may concern," although personally addressed to "John E. Parsons, President of Board of Governors, Woman's Hospital, New York." It is interesting reading, whatever may be its motive; and we trust that its publication will lead American laparotomists to do better work in operations which their own countrymen practically originated—McDowell, Battey, etc. We present the letter in its entirety. If we mistake not, some of the later years' work of Dr. Joseph Price, of Philadelphia, who is constantly warring on chemicals as antiseptics to be used on and in the patient during and after abdominal or other surgical work, has a record better than that of the Woman's Hospital, of New York, and comparable with that of Drs. Tait and Savage—and that, too, without "any cooking of the statistics," or "figure-twisting:"

"I have just had sent to me a copy of the Forty-first Annual Report of the Hospital for Women, in New York, containing an address by Dr. T. Gaillard Thomas, the greater part of which purports to answer some animadversions which are alleged to have been made concerning the results of the work in that institution.

At the conclusion he puts to the critics Shylock's question, 'Are you answered?'

"I have not been one of the critics, and only because the facts never came under my notice; but on their behalf, and on behalf of suffering humanity, I say to Dr. Thomas that they are not answered; but that, on the contrary, he makes out a most deplorable state of matters.

"He puts forward a group of figures which show that in seven large selected hospitals in America the results of abdominal section run from 25 per cent. in Boston City Hospital down to 15.03 per cent. in his own institution. Of this collection of statistics I have only two things to say—that the whole thing is deplorable, and must be remedied; and that the mortality in the New York Woman's Hospital is 'murderous,' as Mathews Duncan used to put it.

"He certainly does not make the matter any better by pointing out that during a period of thirteen years the mortality of his hospital has been 22.43 per cent., and that this triumphant result has been due to the introduction of 'antisepsis, the sheet-anchor of the surgeon.' This makes me more than ever thankful that I discovered the fallacy of this so-called antiseptic craze early in my career.

"I enclose with this letter a copy of the Twenty-third Annual Report of the Birmingham and Midland Hospital for women, for 1893; and I select this year for three reasons. The first is, that it was the first year in which no work was done by myself, and the bulk of it was done by two of my former assistants, and because it was an exceptionally bad year.

"As to the statistics themselves, let me say that, like those of the New York Hospital for Women, in Dr. Thomas' own words, 'the surgical staff of this hospital has absolutely nothing to do with the making of its statistics.' Each case is entered by an officer responsible to the lay committee, and each fatal case is investigated by a special pathologist altogether independent of the operating staff. At the end of each year each operator has to defend his facts before his colleagues on a committee upon which also sit the chairman and secretary of the managing committee, and a perfect audit is made and signed. This document is published with a table upon which every case is entered under the distinguishing initial of its own surgeon, and with such details that any case can be easily identified. Any cooking of the statistics is an absolute impossibility, and only the most trivial errors have ever been detected.

"In 1893 the abdominal sections numbered 176 (against 153 in New York in 1894), with a mortality of 6.2 against 15.03 in the New York Woman's Hospital.

"Another table is given of 1,350 cases of abdominal section performed almost entirely by Dr. Savage and myself from 1884 to 1893, with 75 deaths—a mortality of 5.5 per cent.

"During these years I did all my work with plain soap and water, having abandoned every trace of the varying absurdities of Listerism two years before. Dr. Savage followed Lister in fashion of his own, varying from time to time. The work was fairly well divided between us, as also was the mortality; and, with the most careful reckoning of the figures, the verdict against Listerism must be, in Scotch fashion, 'not proven,' for, with its complete absence, my results were no worse, and, with its partial presence, Dr. Savage was no better. *What can Dr. Thomas have to say to this?*

I have only to say that his results show that there is something radically wrong with his hospital, and that the medical profession of America, advancing as it is beyond the progress of our art in all other countries, cannot afford to let matters go on as they are.

"If I may answer in one word the question which will, of course, follow what I have said, What is the cause of your success?—I say, emphatically, the absolute segregation of our patients and close attention to every detail constitute the whole of the mystery.

"That there is an inevitable mortality in abdominal section, I think is certain. That two men working in the same place, with the same material, should bring it down during ten years to 5.5 per cent. in a continuous consecutive series of 1,350 cases, shows that the inevitable mortality is pretty nearly reached. That a removable mortality of more than three times that amount should be allowed to remain as the minimum to be reached in America cannot be admitted for a moment.

"That even the low mortality we have had in Birmingham is probably not the inevitable mortality is, I think, almost proved by a little figure-twisting; for if we take out four bad years, 1884, 1889, 1890 and 1893, we find 553 cases, with a mortality of 8.5 per cent. But in six good years, 1885, 1886, 1887, 1888, 1891 and 1892, we had 797 cases, with a mortality of 3.5 per cent. I think this latter is nearer the inevitable, and that a higher mortality than that is due to causes entirely removable. All such causes ought to be earnestly sought for, and removed at any cost."

Bacteriology of Acute A ticular Rheumatism.

According to *Gazette Hebdomadaire*, February 3d, 1898, MM. Triboulet and Cayon made an additional report (*Soc. Med. des Hopit.*, January 28, 1898,) of their bacteriological observations with reference to acute articular rheumatism. On December 24th, 1897, they described a diplococcus which they had found in six cases of the disease. So that the following report represents their researches from December, 1897, up to the January meeting:

1. They found the same diplococcus as that previously described in eleven consecutive subsequent cases of the disease.

2. It is found by direct microscopical examination of the blood of patients—sometimes abundantly.

3. Hence acute articular rheumatism is à septicæmia.

4. This septicæmia may be either simple or complex, as two micro-organisms (diplococcus and a minute bacillus)—sometimes three, as one case also exhibited the "bacillus of Achalme"—occur in the same patient. But the diplococci occur invariably in every case and always predominate.

5. As the valvular (cardiac) lesions are caused by the diplococcus, it must be held clinically responsible for the disease.

6. Intravenous injection of a pure culture of the diplococcus in a rabbit, indeed, caused large enough vegetations on the mitral valve in twenty days to produce death by acute mitral stenosis. Histo-bacteriological examination of these vegetations unquestionably proved that they were due to the activity of the inoculated organism.

Plasmins.

This is the name given by Prof. Buchner (*Münchener Med. Wœhensch.*) to the expressed juices of pathogenic bacteria. The manufacture of these bodies presupposes the dispelling of technical and biological difficulties. He describes his method of obtaining the plasmatic cell contents, without recourse to chemical action, by the mechanical trituration of the moist germ mass, followed by expression of the magma thus obtained in a hydraulic press at 400 to 1,500 atmospheres.

Dr. Hahn (*loc. cit*) experimented with three types of pathogenic bacteria: 1. *Cholera or typhus-bacilli*, which, in guinea pigs, produce only acute and local infection; 2. *Anthrax bacilli or staphylococci*, which give rise to acute general infection; and, 3. *Tubercle bacilli*, which provoke chronic general infection.

Cholera-plasmin is strongly albuminous—the albumin behaving like a nucleo-albumin. But Hahn does not believe that there is any therapeutic use for *cholera-plasmin* with human beings, or at most for prophylactic injections.

Typho-plasmin could be used for therapeutic, as well as immunizing purposes.

Anthrax plasmin does not, however, seem to immunize against general infection.

Tuberculo-plasmin is a clear, amber-yellow liquid, containing much coagulable albumin; in contradistinction to Koch's "new tuberculin," it decomposes hydrogen peroxid; and by the addition of 20 per cent. glycerin and 5 per cent. common salt, may be stored in an ice chest without the development of germs.

Because of the inborn susceptibility of guinea pigs to tubercle bacilli, he experimented on 17 of them. Five have survived—*nearly thirty per cent.*

Clinical tests have demonstrated the harmlessness of the remedy in human therapy; hence, investigations in man would seem to be in order. Some benefit would be derived from the non-specific power of the *tuberculo-plasmin* to produce hyperleucocytosis, whose favorable influence on experimental infections has been repeatedly emphasized.

Sedative and Local Anæsthetic.

Dr. J. D. Ely says (*Eclec. Med. Jour.*) that Prof. A. J. Howe suggested the following, which has many uses:

℞ Camphor gum.....
Chloral hydrate.....
Chloroform..... ..... āā ʒj.
Morph. sulphate... ..... gr. v—Mix.

If the ingredients are put together in the order named, a clear mixture will result; otherwise, not. Triturate the camphor and chloral together, add the chloroform and finally the morphine, which, on shaking, will soon dissolve, and the mixture become clear, when it is ready for use.

It may be administered internally, applied locally, or used by inhalation.

For *internal administration*, the dose is three drops and upwards to the limit as required. Syrup of rhubarb compound is an excellent vehicle, as it covers the taste and is otherwise beneficial. *Water is not a good vehicle*, as the camphor will not mix with it, *though it may be added in desired quantities* after mixing "the sedative" with the rhubarb compound syrup. This mixture, however, is not a permanent one; so that it is best to add the vehicle only at the time of administering.

Used internally, it is equal, if not superior, to any of the chlor-anodynes, chlorodynes, etc., particularly for *gastrodynes and various colics* for which such agents are applicable. *For sea-sickness*, the mixture merits the name *specific;* it acts like magic in some cases. Four successive cases were completely relieved by a single dose of three drops.

When *used topically*, a few drops are to be painted over the painful spots. A few drops on a pledget of cotton, put into the cavity of an *aching tooth*, after the cavity has been wiped out, and applied to the gums, will usually stop the pain of any not ulcerated, and requiring immediate extraction.

Used in the same manner, it will often render *tooth-pulling painless* or nearly so; it is as good as most of the anæsthetics containing co caine, for this purpose, without its danger.

Applied to *inflamed joints*, it is helpful, and will contribute toward relief in *many other troubles* which will suggest themselves. Applied over the seat of pain, it is especially useful in *neuralgia of superficial nerves.*

Inhaled frequently, as spirits of camphor is commonly used, it is likewise useful in *neuralgias of various kinds*—especially about the face and head.

Study of the Difficulties of Defecation in Infants.

Dr. Thos. Chas. Martin, Cleveland, O., Lecturer on Diseases of the Rectum in the Cleveland College of Physicians and Surgeons, during the Forty-Eighth Annual meeting of the American Medical Association, held at Philadelphia, June 1–4, 1897, read a paper giving the interesting results of his study of the difficulties of defecation in infants; and he has done us the favor to furnish the following original abstract of the paper.

It is generally recognized as a fact that infants and young children strain at stool. The infant and young child strain violently at expulsion of semi-solid fæces because of the imperfect development of the anatomic features concerned in the mechanism of defecation. These are:

1. The infant's lower gut is muscularly deficient.

2. Its mobility within the abdomen is obstructive to defecation.

3. The rectal valves are obstructive.

4. The infant's anus, not being sufficiently expansive, is, also, obstructive to defecation.

Records of *post mortem* observations were read, and specimens of recta exhibited which proved that:

1st. The muscular development of the adult rectum and lower sigmoid is plainly apparent, and that a deficient muscularity is observable in the infant specimens. In the infant gut, the intrinsic power of peristalsis is not present in that degree necessary to it as a component expulsory factor.

2d. The meso-peritoneum of these parts in the adult is, relatively, very considerably shorter than that in the infant. The adult gut is slightly tortuous; that of the infant is much angulated. Mobility and angulation of the infant gut conspire to obstruct the passage of formed fæces.

3d. The rectal valve appears to bear the same proportion to the gut in both adult and infant; but when the difference in muscular development in the two is noticed, the disproportionate great resistance of the valve in the infant rectum becomes an obvious fact.

4th. The anal expansibility is adequate in the adult; but because of the greatly contracted bony pelvic outlet, it is deficient in the infant, and constitutes an obstinate obstruction to the passage of semi-solid fæces.

Co-relative to these facts, it must be recognized that the adult rectum has resident within its own wall a powerful expulsive muscular mechanism; that in the adult the shortening of the mesentery holds the upper rectum steady under the applied auxiliary forces; that in the adult the flexures of the sigmoid are not necessarily obstructive, though in a desirable measure retardative; that in the adult the incline of the lower sacrum and coccyx behind, and the development of the uterus and prostate and their inherent supports in front, provides the lower adult rectum with a firm funnel-like arrangement which guides the fæces directly upon the os internum of the anus; that the rectal valves may divide the fæces into portions to facilitate their separate successive discharge; and finally, in sequence, that the physiologic descent of the entire pelvic floor reduces this last possible resistance to the minimum in adult defecation.

Infantile straining, the ruptures and prolapses, constipation, retention of fæces and the multitudinons consequent ills demanded study, and this investigation forces the conclusion that the individual's escape is ultimately assured by the process of development; but, that for the normally formed infant, the physician will find the solution of the problem of difficult defecation in the solution of the stool.

Uranium Nitrates in Diabetes Milletus.

Dr. J. W. Daniels, St. Peter, Minn., reports (*Northwest Lancet*, March 1,) six cases of glyco-

suria under his care, which have been subjected to treatment by the use of uranium nitrate.

[This remedy has been before the profession in the therapeutics of diabetes mellitus since 1874, and the results have, for the most part, been favorable to its use. But as "all the soluble and absorbable salts of this metal are violent poisons—more dangerous even than arsenic —*half* milligramme of the trioxide to each kilogramme of an animal's weight being surely fatal" (*Pract. Therap*, Foster), and as there is no known antagonist to uranium, and, further, as the symptoms of poisoning by it are insidious, it is probable that its uses as a medicine has not been much tested. While it has been used in doses of two and three grains repeatedly without injury, and even in five grains in in a few instances, we would caution the reader that eminent authors remark that "it does not seem safe, as a rule, to begin with more than *one-sixth of a grain to begin with*, three times daily." "Among the earliest symptoms of poisoning is glycosuria; then follow gastro-enteritis, a nephritis not unlike that of scarlet fever, and hemorrhages into the heart and liver; finally, in case death is escaped, there are the gravest disturbances of nutrition, and excessive emaciation." Uranium is poisonous to protoplasm and destructive to every living tissue—even destroying the vitality of the blood."—*Ibid.*]

After detailing his six cases, he compares the effects of uranium treatment with four cases treated for six years previous to the use of uranium nitrate; and then summarizes his deductions as follows:

1. In the cases where uranium was used, the initial dose was one to two grains. This dose was increased up to four, and then up to twelve grains, three times daily.

2. Intolerance was noted in only one case, and in that case it was not long persistent.

3. The larger doses and time appear to give better results.

4. It seems to be markedly superior generally to any derivative of opium.

5. It is not equally beneficial in all cases, as is apparent in one of his six cases, where absolutely no improvement could be detected.

After considering the natural tendency of the disease to become benign, among cases of advanced age, and the frequency in this class of the complete disappearance of sugar for a time without any treatment, there still remains evidence that the drug caused the sugar to disappear more rapidly; and even where the excretion of sugar was not altered in percentage, there was much gain in strength, as instanced in one of the cases.

In conclusion, he states, "altogether it appears that in uranium nitrate, we have a drug of unequaled value in different cases of diabetes; and, on the whole, one of the most efficient remedies thus far brought forward."

The importance of the report of his cases is in the use of the very large doses of uranium nitrate administered, which confirms the report of West's cases and numerous other cases—notwithstanding the very small doses which some assert to be fatal to the patient.

Treatment of Pulmonary Tuberculosis with Remedies Derived from the Specific Germ.

In a paper, read by invitation before the Academy of Medicine of Cincinnati, December 20, 1897, Dr. Karl von Ruck, Asheville, N. C., remarks that a careful re examination of the subject may be proper that we may know what the newer remedies really are, what their therapeutic value promises to be, and what danger, if any, attend their use. He hoped to be the better able to arrive at the truth, because of having followed both the experimental and the clinical side of the work, and having produced all the specific remedies which have claimed attention of the profession.

He first called attention to results obtained in two series of experiments, in which two hundred animals were used to determine the value of several remedies, and to show any superiority of one remedy over the other.

The second series was to confirm the results in the first; variations obtained were so slight that there was a full confirmation of the previous results in every respect.

All the animals were treated until a few days before death, under constant observation of temperature, weight and general condition, excepting "Group G," treated with watery extract of tubercle bacilli.

With exception of one animal in "Group G," which apparently recovered, all died of tuberculosis or its effects; in the post mortems more or less recent tubercles were found nearly as frequently in treated animals as in those which served for control. But old fibroid changes were more marked the longer the animals survived infection.

For the claim of benefit derived, based upon *prolongation of life* only, well marked differences are necessary, inasmuch as artificial tuberculosis in guinea-pigs is not so uniform in its fatal course, as has been frequently asserted, unless the infection is made intra-peritoneal and very large numbers of tubercle bacilli are introduced. Animals so infected are overwhelmed by the infection, and die within thirty or forty

days, giving not enough time or opportunity for treatment.

Subcutaneous infections with moderate, uniform quantities of bacilli were therefore employed. But animals so infected appear to vary in the degree of individual resistance; so that, regardless of every possible precaution, the disease pursued a more rapidly fatal course in some animals than in others.

The use of a larger number of animals, and a repetition of the experiments, were therefore deemed essential to prevent erroneous conclusions.

The following results were obtained:

Group A.—Control animals. Average duration of life after infection, 119 days; average loss of weight, 90 grammes.

Group B.—Treated with *Paquin's serum.* Average duration of life after infection, 100 days; average loss of weight, 110 grammes.

Group C.—Treated with *Koch's tuberculin.* Average duration of life after infection, 130 days; average loss of weight, 90 grammes.

Group D.—Treated with *antiphthisin Klebs.* Average duration of life after infection, 141 days; average loss of weight, 70 grammes.

Group E.—Treated with *glycerine extract of tubercle bacilli.* Average duration of life after infection, 178 days; average loss of weight, 75 grammes.

Group F.—Treated with *tuberculinum purificatum.* Average duration of life after infection, 200 days; average loss of weight, 40 grammes.

Group G.—Treated with *watery extract of tubercle bacilli.* Average duration of life after infection, 240 days; average loss of weight, 40 grammes.

For further control two other groups of animals were treated, one group with *nuclein* and the other with a preparation made from the *unplanted culture fluid*, following all the steps in the preparation of antiphthisin, and giving all the tests claimed by Klebs to be characteristic for antiphthisin.

Group H.—Treated with *nuclein* (Vaughan). Average duration of life after infection, 102 days; average loss of weight, 42 grammes.

Group I.—Treated with *imitation of antiphthisin.* Average duration of life after infection, 133 days; average loss of weight, 110 grammes.

Minute post-mortem examinations, including microscopical examinations of sections f om all diseased tissues found, were made in every instance.

On the whole, the treated animals, especially those which received purified tuberculin and extracts of tubercle bacilli, showed more frequently absence of tubercle bacilli than did the control animals; but this evidence is not strong enough to make any claim on this account for the remedies employed.

Of more import is "*Group G,*" *treated with watery extract of tubercle bacilli* for definite periods of time, namely, a sub-group of four animals for 50 days, another of like number for 100 days, and still another, comprising two animals, for 150 days. All these animals survived their respective periods of treatment. Those treated for 50 days lived for between 60 and 83 days thereafter; those treated for 100 days lived 135, 144, 155 and 161 days respectively; and of those treated for 150 days, one lived 195 and the other 272 days after treatment was suspended. The latter two animals lived longer than any of the others, and the one which died 195 days after treatment was stopped, and 345 days after infection, died of suffocation through pressure upon the trachea of a greatly enlarged substernal gland, which proved caseous, and contained tubercle bacilli; several other tubercular glands were found, and fibroid nodules were also found in the lungs, liver and spleen, but the latter contained no tubercle bacilli; neither was there any eruption of recent tubercle.

The other animal did not die of tuberculosis. It was well and had gained in weight 150 grammes to within two days of its death, which the post-mortem examination showed to have been due to an incidental acute inflammatory affection. Fibroid nodules were found in the liver, spleen and lungs; several lumbar and mesenteric glands showed enlargement and fibroid changes, but a most searching examination of all these structures in numerous microscopical sections failed to demonstrate the presence of tubercle bacilli.

Implantations made in several animals with these tissues, now nearly two months ago, have so far caused no disturbance; the animals are free from fever and apparently well, and he is sure that these implantations will eventually prove negative. If so, this will be the only animal in which an unquestionable cure has resulted in the many which have been experimented upon in his laboratory.

While not brilliant, his experimental results can be considered as greatly encouraging, especially those obtained with the watery extract.

He has employed tuberculin, antiphthisin, purified tuberculin, and watery extract; but has abstained from the use of tuberculin R: First, because of satisfactory results from puri-

fied tuberculin and from watery extract; and, second, because he found tuberculin R to contain fragments of tubercle bacilli which might be virulent.

This preparation, like the watery extract, is made from living virulent germs, which, being removed from the culture fluid, are dried, powdered, and with the addition of distilled water, their separation is sought to be accomplished by the centrifugal machine.

That this is not effectually accomplished has been confirmed by other experimenters besides myself. Dr. Trudeau has even produced virulent infection with this preparation. The product is certainly not a solution of the germ, but rather an emulsion of fragments and some fat, which, however, also contains proteids in solution. The only way that he would employ the preparation would be after filtering it through porcelain. In doing this, however, the amount of proteids in solution is so extremely small that a quantitative estimation is impossible.

Dr. von Ruck's *watery extract of tubercle bacilli* is free from these objections, and differs in its preparation in so far from tuberculin R that after washing and drying the germs he extracts their fat with sulphuric ether. He finds that after drying and powdering the extracted bacilli, and macerating them in distilled water at 112°F., their proteid substance enters readily into solution. By repeating the drying and powdering, from 80 to 90 per cent. of the weight of the germs (after being extracted with ether) can be obtained in a solution which readily passes through a porcelain filter. The filtered product is standardized to one-tenth of 1 per cent. of organic substance, and is preserved with glycerine.

His results in animal experiments conducted with the greatest care, as well as the clinical data, indicate that extraction of the germs with ether does not injure or destroy the proteids obtained, and therein lies the only difference in the manufacture, beyond the substitution of filtering through porcelain, for the centrifugal process. Neither can he find any authority in chemistry which supports the theory that sulphuric ether has any such effect.

The clinical value of remedies which he has employed in pulmonary cases must, for the present, remain largely a matter of opinion.

In cases which progress unfavorably and die, there can, of course, be no demonstration of curative effects in the human subject any more than in the animal experiment; and without exact knowledge of the actual duration of the disease, and the manifold complications which arise toward its close, there is not even an opportunity of showing that the remedies employed prolonged the life of the patient

In cases which improve or make apparent recovery, it is equally impossible to say what the result would have been without such medication. If, in a certain period of one's practice, more favorable results have been noted than in a previous one, it is reasonable to attribute this to the fact that the clinical material was, on the whole, more favorable.

The elements of uncertainty can only be eliminated by years of observation in a great number of patients, unless with a remedy capable of exerting a very decided and powerful influence toward a cure; but however specific in their action and prompt in effect, no remedy now available, or likely to become available in the near future, can influence the established pulmonary disease, so that after a few months of its use, or with the experience of a dozen or two of cases, a valid and a final judgment is possible.

When we propose to treat pulmonary tuberculosis with specific remedies, in the hope of removal, or aiding in the removal of the specific cause or of its effects, or both, the germs must be accessible to the remedy through the circulation, and the lesion must be such that the pathological tissue changes have not progressed to a degree of degeneration or cellular death, from which a return to normal conditions is impossible, or the pathological new-formation must be of a character so that it can be absorbed.

We may admit access of remedies to recent tubercle, or perhaps even to small caseous tubercle, and absorption of the latter may also be conceded; but cases, as they present themselves for treatment, are rarely, if ever, such that the foregoing is the sum total of the pathological changes present.

On the contrary, in what we call an early stage, and in the most favorable form, in which exudative inflammatory changes are absent, larger aggregates of tubercle and nodules are present, often with caseous centres, many times surrounded by fibroid tissues; at other times, the caseous process has reached the stage of softening or excavation.

Scattered peripherally are smaller isolated tubercles of more recent origin, but they do not readily reveal their presence either through percussion or auscultation, and much practice is necessary to detect the more delicate physical changes in such infiltrated areas.

By far the greater number of patients present such advanced pathological changes in large portions of both lungs, and often we have ex-

udative pneumonic processes, with extensive caseation, suppuration of cavities, and absorption of disintegrating organic substances, in addition to toxic products from other pathogenic germs.

Unless more or less of inflammatory changes or absorption of toxic products are present, patients in the early stage, with limited lung involvement, do not present symptoms to cause them to seek our advice; and, when present, the active symptoms frequently cease, and a period of improvement of various duration follows regardless of treatment—a fact which must account for the glowing reports made frequently for new remedies, the administrations of which happen to coincide with such a favorable change.

Excepting acute miliary tuberculosis, or extensive eruption of new tubercle in the chronic course of the disease, the severer symptoms in the advancing stages are not produced by tubercle bacilli, or by tubercle removable with specific remedies, but are due to secondary changes in degenerated tubercle, and in their vicinity, such as exudative pneumonias, retention, and absorption of specific and non-specific toxic products incidental to suppuration from mixed infection, etc, which are all beyond our powers of removal with remedies directed solely against the specific cause.

If we observe their mitigation and disappearance under such remedies, we can at most credit them with a partial influence through removal of already formed tubercle or prevention of new eruptions and extensions into previously intact tissues, thereby enabliug the organism to more effectually resist and overcome the complications spoken of.

Bearing these natural limitations constantly in mind, he has carefully observed the course of the disease and its progress in more than 1,500 patients which he has treated with specific products during the last seven years. Repressing at all times the natural desire to credit favorable changes to the influence of such medication, he has sought to appreciate their relation in each individual case.

Under such a course he has never seen cause for becoming greatly enthused, or to share the belief of some observers that the treatment of tuberculosis is solved. Though at times greatly encouraged, he has also had periods of serious doubt and uncertainty, and has never seen the time when he felt that such remedies were more than an aid in the treatment of cases of well-established pulmonary tuberculosis, such as come under my own care.

Neither has he relaxed efforts in the use and application of every other means at his command. Seeing the shortcomings of all remedies, he has constantly endeavored to also perfect the older means and methods, giving unremitting attention to even the smallest details. He is satisfied that this course, together with increasing experience, has also a share in the bettering of his results.

Nevertheless, it is his conviction that the specific remedies used have been a material aid in the treatment of many of his patients, and he is the more ready to continue their use, inasmuch as his results in animal experiments have also improved with the progressive changes from crude tuberculin to antiphthisin, purified tuberculin, and, finally, to the watery extract.

He has elsewhere reported his clinical results with tuberculin and antiphthisin as additions to the usual methods of treatment. His report of cases treated with purified tuberculin promises to be better than any made heretofore.

Confirmatory of his opinion as to the aid these remedies have been in his clinical work, he has the opinions of several hundred colleagues, and many seem inclined to claim much more for them than he is willing to concede.

The conclusions based upon the use of antiphthisin in the Charity Hospital, of New Orleans, are peculiarly interesting, inasmuch as the cases treated were mostly old inmates of the hospital, none of which were improving, and most of them losing ground before the treatment begun; all cases improved under simple substitution of antiphthisin for creosote with the exception of two, and these were so far advanced that there was no reasonable ground for expecting any change for the better; several cases were pronounced as being practically cured after having been treated for ten weeks.

As to the use of the watery extract, he has now an experience of six months in upward of twenty cases in various stages of the disease. So far five cases are free from symptoms, which include two cases of moderate tubercular infiltrations in the larynx; four others are rapidly approaching such a result, and with exception of two septic advanced cases, which received no apparent benefit, all others are progressing favorably. The laryngeal cases are, however, of special interest, since the tubercular process there is subject to inspection.

The two cases mentioned, and two others still under treatment, show local reactions in the larynx under large doses of the remedy, consisting in increased tumefaction and secre-

tions of the parts involved. These reactions continued from twenty-four hours to four or five days, and left a visible and unmistakable better appearance every time after their subsidence.

Several small ulcers have entirely healed; in two cases, infiltrations have disappeared, and in the most severe case the change has been the more remarkable, inasmuch as the patient had been under his care for nearly eighteen months without effecting material change for the better, either of the ulceration upon the posterior wall or of the true cords and vocal bands, which presented enormous infiltration, the cords appearing in the mirror of the thickness of an ordinary lead pencil.

Curettement of the ulcers, lactic acid, iodine, nitrate of silver, etc., had all been carefully and painstakingly employed, with the result that the condition did not grow materially worse.

After the first local reaction all other treatment of the larynx was stopped, and about six or eight such reactions have since been induced at intervals of a week or ten days, and improvement is now present. The true cords are nearly normal in thickness, and pearly-white when not reacting; infiltration of posterior wall is confined to edges of the ulcer, which later has every evidence of healing, and has greatly diminished in size.

In summarizing the evidence of his experience, under strict conservatism, he claims a limited value (degree not yet fully determined) for the remedies which he has employed. This value, however, by no means justifies abandonment of any other valuable aid in the treatment of pulmonary tuberculosis.

The remedies used by Dr. von Ruck can be given with absolute safety. Being now available at nominal expense, their use is not only justified, but desirable, in order to obtain a larger series of cases, and the experience of a greater number of observers, with a view of a final and a more correct appreciation of the benefits they are capable of conferring.

Agglutination Test in Diagnosis of Yellow Fever.

It is going the rounds that Drs. P. E. Archinard and R. S. Woodson, U. S. Army, while in New Orleans discovered an "agglutination diagnostic test of yellow fever," made as follows: Take a drop of blood from lobe of ear of patient; dissolve in twenty times its volume of sterilized water. Place this in a culture-tube containing yellow fever germs, which have been active and increasing for 24 hours. In from five to thirty minutes after the drop of suspected blood is dissolved in 20 times its volume, it is put into the culture-tube; the germs in the blood become agglutinated, and motility ceases entirely, which shows that the blood is that of yellow fever. If, however, agglutination does not take place, yellow fever is not present. The yellow fever germ has been found in between 87 and 90 per cent. of the cases in which this test has been employed. Therefore it must be superior to that of Sanarelli, by means of which the germ was found in only 47 per cent. of the cases.

Diagnosis of Intestinal Worms Without Examination of Stools.

Presse Medicale (according to *Quebec Rev. Med.*, Dec. 1), states that De la Feunte points out two signs which diagnosticate intestinal helminthiasis without examining the stools: *One is* the occurrence of colicky attacks, coming on with great suddenness, seizing the child in the midst of play; they are quite severe at the outset, and confined to one part of the abdomen. All the rest of it may be palpated without causing the slightest pain; but the moment the seat of the colic is touched, the child will cry. *The other is* bilateral narrowing of the visual field, usually so pronounced as to be detected by passing the finger to and fro before each of the patient's eyes. This second sign, of course, can be turned to account only in the case of children who have attained a certain age.—*N. A. Med. Rev.*, Jan., 1898.

Need for Better Appendicitis Diagnosis.

Mrs. McCaffrey was undergoing an appendicitis operation at St. Agnes Hospital, Philadelphia (*Pacif. Med Jour.*, Feb., 1898,) when the liver, on examination, disclosed a dark blue spot from which, when cut, nearly 500 gall stones, ranging in size from a grape seed to a small marble, gushed forth. "*The vermiform appendage was found perfectly normal.*"

Papine Was Used by

Dr. A. M. Ritter, Milo, Ohio, for at least six months in increasing doses (beginning with five drops), without doing the least harm. It acts as a paine-reliever and nerve sedative. It is not every opiate that can be given for six months, and then cut off without serious consequences.

Book Notices.

Sexual Neurasthenia. (Nervous Exhaustion). *With a chapter on* **Diet for the Nervous.** By GEORGE M. BEARD, A. M., M. D., Formerly Lecturer on Nervous Diseases, University of City of New York, etc. Edited, with *Notes and Additions*, by A. D. ROCKWELL, A. M., M. D., Formerly Professor of Electro-Therapeutics, N. Y. Post Graduate Medical School and Hospital, etc. *Fifth Edition, with Formulas.* New York: E. B. Treat & Co. 1898. Small 8vo. Pp. 308. Cloth. $2.

The popularity of this work is attested by the number of editions it has passed through since the death of Dr. Beard. It is a most practical discussion of the hygiene, causes, symptoms and treatment of sexual neurasthenia—everywhere emphasizing the importance of remembering that "each case is a law unto itself, and that there is no stereotyped method of treatment." Such cases as are described in this volume are more or less frequent in the practice of every physician, and he often needs the help of suggestion as to how to diagnose the case, and how to treat it. This work furnishes all the aid of a consultation in such cases. We are struck with the frequent recommendations of the use of the depolarizing electrode, etc., as an important means of treatment.

Text Book on Surgery. By JOHN A. WYETH, M. D., Professor of Surgery in, and President of Faculty of New York Polyclinic Medical School and Hospital, etc. *Third Edition, Revised and Enlarged.* New York: D. Appleton & Co. 1898. Royal 8vo. Pp. 997—x. Buckram.

It would be difficult to estimate the value of this book in dollars and cents. As compared with former editions, the improvements in the present are so numerous—not to speak of the many advances in surgical technique noted—that it seems an entirely new book on surgery—it is far more than a revision. The liberality of the Publishers in issuing the work in the best of styles is everywhere manifest. Nearly 940 costly illustrations—many in colors—are introduced; of these, about 200 new engravings appear in this edition. But, turning to the text: we find the work well arranged as a text-book—both for the undergraduate student or for the practitioner. In the chapter on anæsthetics, while credit is justly given to Koller and to Corning for their introduction of cocaine, we find no credit given to Long for his uses of ether—though his fame as the author of anæsthesia by ether was resurrected by the immortal Sims, to whose memory, indeed, the author dedicates his book. Whisky and morphine are advocated as general anæsthetics under given circumstances. Ethyl chloride, however, ought to have been prominently mentioned as a local anæsthetic; and along with cocaine, we are disappointed in not finding eucaine advocated. In the chapter on amputations, we were interested in the discussion of methods of hæmostasis in cases of hip joint amputation by the use of pins and the rubber tube tourniquet, which have wonderfully reduced the mortality to a very small percentage. But the limit of space for a book notice does not allow us to go into minutiæ. We can only add that the author is quite precise in giving details as to procedures which greatly adds to the value of the book for the general practitioner who has to do surgery. The profusion of illustration greatly assists in a thorough comprehension of text description of detail of methods. The work is a most important addition to the useful library of surgeons. The index is very complete, which greatly assists in ready reference.

Year-Book of Treatment for 1898. *A Critical Review for Practitioners of Medicine and Surgery.* By TWENTY-SIX ENGLISH CONTRIBUTORS. Philadelphia and New York: Lea Brothers & Co.

This is the *fourteenth* annual issue of the Year-Book of Therapeutics, compiled for the most part from British and other foreign journals. This, however, in no manner detracts from the value of the work, for, as a rule, foreigners are more scientific in their study of therapeutics than Americans, as they are more in the habit of testing the action of new drugs experimentally in the laboratories. Naturally we turn to some of the diseases of largest mortality to see what advances are noted in their treatment, but are disappointed in great part in the results attributable to their use. Thus Grawitz, in 1896, recommended *eosote* (or valerianic acid ester of creosote) for tuberculosis and for many gastro intestinal affections in commencing doses of three grains, gradually increasing to six or nine grains, three times daily, with the statement that its use was nearly always attended with complete success; but we find no further reference to it since the quotations from July and October, 1896, journals. As to uranium nitrate in diabetes, we find nothing suggested beyond the general deductions which are given in this issue under the head of *Analysis, etc.*, unless it be that Burton commences with doses of a grain three times daily, which are gradually increased to

six grains three times daily—even to twelve grains at a later period; yet without any remark as to the very poisonous qualities of the drug which Foster insists upon in doses beyond a fraction of a grain. Notwithstanding the negative—even adverse criticism of Saundby and Tyson, it appears that the drug merits further trial. It is important to state, with reference to the book itself, that the information given in it is reliable, and that on nearly every page valuable therapeutic facts are stated, which make this *Year-Book* of extreme service to practitioners.

Editorial.

Medical Professional Reform.

Some of our Western exchanges especially are bent upon a revolution of professional opinion and conduct. They call attention to want of harmony in the ranks of the "regulars," and point out some disgraceful proceedings on the part of many professional men. They charge that "drummers" for patients are sent out to take them from their family physicians. The *American Journal of Surgery and Gynæcology* speaks of the "disgraceful newspaper notoriety of some college men of St. Louis," which tends to "destroy all feeling of honor" between doctors, and places the medical profession "upon the same plane as the groceryman and the candlestick maker." In short, there appears to be a base degeneracy in the regular medical body in certain sections. Such moral degeneracy extends into medical centres where even professors are most earnest in the fight for supremacy, regardless of methods of right or wrong. So that this prostituting tendency is not due to the excessive output of a few years ago of poorly educated physicians. State boards of examiners are now admitting only the better educated into professional ranks, and the intense rivalry between colleges compels in each a higher standard for graduation than formerly. Even "the old plea that homœopathy and eclectics are ignorant or not well grounded in the fundamental branches of medicine, no longer holds good."

Probably doctors themselves are greatly to blame. They vilify and abuse homœopaths and eclectics, who in turn repel the attacks in a manner that shows them as well educated and refined at least as the regulars. These homœopaths and eclectics may be gentlemen of unquestioned integrity and of high personal worth; of undoubted professional honor—opposing all disgraceful methods in obtaining "business." Yet such men are barred from membership in medical societies—even though they may not practice under sectarian names, nor seek to obtain practice by proclaiming themselves homœopaths or eclectics. Such a course, according to the journal named, from which we are quoting or paraphrasing so much of this writing, is not right; is not the ethics of common sense, of common decency, or of common manhood."

"The time is ripe," says Dr. Lanphear, "for the burying of sectarianism in medicine." He thinks if the American Medical Association will "allow all affiliating bodies to accept for membership graduates of reputable homœopathic and eclectic schools, who do not use the term 'homœopath' or 'eclectic' to trade upon, who are simply known as 'physicians,' and practice as they please (as do we all), and allow consultations with such practitioners, the problem of obliteration will soon solve itself, and one of the chief obstacles to proper medical legislation will have been removed." The effect would be the forming of one powerful organization—not of regulars, nor of eclectics nor of homœopaths—but of earnest physicians, wielded for public good, effectually and speedily. As it is, each sect is suspicious of the other, and antagonizes, rather than supports, any measure which might possibly be supposed to give advantage to a rival.

At the close of the nineteenth century the democratic spirit which comes of liberal education, even religious barriers between denominations or creeds are melting as ice in the summer's sun. The existing disturbing divisions between medical sects are out of harmony with the day in which we live.

Kansas takes the lead this year in the reform movement. The State "regulars," "homœopathic" and "eclectic" societies are to meet at the same time and in the same place, and joint sessions will be held to take united action to secures needful medical legislation.

Texas doctors are equally agitated over the new State law, which requires all practitioners of medicine to pay an "occupation tax." The *Southwestern Medical and Surgical Reporter* declares: "Certainly the cause for general action is now sufficient to induce every physician—be he 'regular,' 'homœopath,' 'eclectic,' or what not—to go to work as a matter of self-protection."

The homœopath believes mostly in one class of remedies; the eclectic in another. But

there are regulars who teach only a given line of practice, while others teach an entirely different practice, while yet both factions, who can never agree in consultations, recognize and affiliate with each other in the brotherhood of the profession. In short, they agree to disagree in the very *fundamental principles* of their different practices. Wherein, then, do the different schools of practice more radically differ, or differ so much, as not to admit each school into the common brotherhood of feeling and affiliation?

We have compiled the above from different sources to show in what direction the regular profession is tending as the twentieth century approaches.

Roster of Virginia Surgeons of Confederate States Army and Navy.

Through the instrumentality of Dr. Arthur Jordan, of this city, who is the author of the Price-Nash-McGuire prize "History of Medicine and Surgery in Virginia," awarded by the Medical Society of Virginia during its last annual session, an order was received through Senator Daniel to have a copy made from the records in the Surgeon General's office of all the surgeons and assistant surgeons hailing from Virginia in the Confederate States army and navy. The *Richmond Dispatch* of February 20th and 27th has published a large portion of this list, and promises from time to time to publish other portions until the entire record is published. This is the first time since the war that this record has been published, and as the manuscript roster in the office of the Surgeon General is decaying by age, so that it does not permit of any other than the most careful handling, nothing but a special order, secured by one high in authority, can secure permission even to have copies made from the records. The profession of Virginia is specially grateful to Senator John W. Daniel for his assistance in this matter, as he is always courteous to the requests of the profession of medicine.

The Louisiana State Beard of Medical Examiners,

According to the *New Orleans Medical and Surgical Journal*, March, 1898, "have scored another, and, we trust, a final victory, over A. C. Fowler, who has been practising medicine in Gretna for several years without diploma or license from the Board. This case has been fought stubbornly for some time, and the decision of the Hon. Emile Rose perpetuates the temporary injunction which had already been obtained, and imposes a fine of $100, together with $50 attorney's fees on the defendant." We join most heartily in congratulating "Dr. Kennedy, the President, and his Board upon this achievement, and we trust this will spur them on to further corrections of similar evils in our city and State."

In some States like activity and push is required on the part of the Boards of Medical Examiners in order to rid them of unlawful practitioners—especially of the ignorant or quackish classes.

Fatty Ills, and their Masquerades,

Is the title of a contribution to clinical medicine for practitioners and students, to emphasize the inestimable value of the microscope in detecting the pre-stages of amaurosis, angina pectoris, apoplexy, Bright's disease, cataract, dementia, fatty heart, gall stones, glaucoma, hæmato-philia, locomotor ataxia, etc., and the like value of American means of treatment in these pre-stages, and in those advanced states usually considered incurable. Drs. Ephraim and John Ashburton Cutter are authors. The book, of over 200 pages, is about ready. Cloth-bound; price, $1. Judging from the specimen leaves sent us, it will be a most valuable book, by most eminent authors. Those desiring a copy, shonld address either Dr. Cutter, Equitable Building, New York, enclosing a dollar for the book.

State Board of Health of Louisiana.

In place of the recently resigned Board, because of the unjust criticisms of the merchants of New Orleans, a new Board has been organized, with the following officers: Dr. Edmond Souchon, *President;* Dr. L. F. Reynaud, *Vice President;* Dr. John Callan, *Chief Sanitary Inspector;* Dr. S. J. Théard, *Assistant Sanitary Inspector;* Dr. G. F. Patton, retained as *Secretary;* Mr. Frank Zacharie, *Attorney.* While not approving of the popular sentiments of merchants which caused the recent excellent Board to resign, we are glad to see that the new Board is composed of well selected members.

Compulsory Antitoxin.

The Government of Bosnia and Herzegovina compels the use of diphtheria antitoxin—both as a preventive and curative agent.

Medical Society of North Carolina.

The Committee of Arrangements of this Society have decided on May 3rd, 4th, and 5th, as the dates for the meeting of the next session in Charlotte, N. C.

Medical Colleges and Practice in United States.

The *Physician and Surgeon*, February, 1898, states that Dr. Wm. T. Slayton says there are 154 medical schools in this country. Of these, 117 require attendance on four regular sessions. In 27, the sessions are eight months each; in 10, nine months. The District of Columbia and 29 States admit to practice on passing an examination before State Boards. In addition, 18 require diplomas from reputable medical colleges. Alaska, Kansas, Michigan, Nevada, Vermont, and Wyoming—one Territory and five States—have practically no laws controlling the practice of medicine.

Ohio State Medical Examining Board.

According to the recent law, all practitioners in Ohio have to be registered, with dates of diplomas, etc., from reputable medical colleges. Dr. Chas. A. L Reed reports the effects of the law. Over 7,400 physicians have registered; and about 960 pretenders have been found out and driven from the Ohio profession. In fact, a number of the disqualified are under indictment—24 in Hamilton county alone. We feel sorry for the few States in which no protective law exists, for only in them can quackery and ignorance now find a home.

Obituary Record.

Dr. Thomas J. Moore,

Whose death was announced in issue for February 25, was buried in Hollywood Cemetery of this city. Students of the graduating class of the University College of Medicine, in which he was Clinical Professor, served as pallbearers. The nearly 300 students of the University College, beside the Faculty, attended the funeral in a body. Services were conducted in the Second Presbyterian church by the pastor, Rev. Dr. M. D. Hoge. The students, besides a number of resolutions, voted as a mark of respect that they would place a life size portrait of Prof. Moore in the hall of the University College of Medicine. The Richmond Academy of Medicine and Surgery also held a meeting and adopted resolutions expressive of their feelings on the occasion.

Dr. William Welby Luck

Died at his home in Leesburg, Va., February 20, 1898, after an illness of less than two weeks—beginning as pneumonia and ending as typhoid fever. His father (Dr. William J. Luck) and mother were with him. He was born in Middleburg, Va., May 28, 1871. After an academic education from the best schools of his section of the State and the Randolph-Macon College, he entered upon the study of medicine, and graduated from the University of Virginia in 1894. The same year he passed the Medical Examining Board of Virginia, and joined the Medical Society of Virginia. In appreciation of the thoroughness of his study, it may be stated that while but a student at the University of Virginia he was selected as the clinical assistant to the University Dispensary, and was made Assistant Demonstrator of Medical Biology and Pathology. In 1894, after his graduation, he served a session as instructor in histology and pathology in the University Summer School of Medicine. He died as he had lived—prepared to go.

Dr. Samuel H. Dismond

Died at his home in Richmond, Va., March 1, 1898, in his forty-fourth year of age. He was one of the most respected colored physicians of the South, and won, as he merited, for himself the highest esteem of both white and colored. He was born in Lynchburg, Va. He was employed as a porter in the drug store of Messrs. Faulkner & Craighill, of that city, and devoted his spare time to study. He acquired knowledge rapidly, and soon fitted himself for college. Receiving assistance from Dr. Craighill, he attended the Richmond Institute (now the colored Theological Seminary), from which he graduated with honors in 1879. He then attended medical and pharmacal lectures in Howard University, from which he graduated both as Graduate in Pharmacy and as Doctor of Medicine in 1883. He located in Richmond, and his success as a physician has been marked. He was a member of leading benevolent and charitable organizations of his race, and was surgeon of the First Battalion of Infantry (colored) Virginia Volunteers. He was constantly engaged in good works, and was engaged at the time of his death in trying to organize the colored physicians of the State into a State Medical Society. Such a man as Dr. Dismond was bound to win and retain the respect of all with whom he was associated; so that he was held in high esteem by the profession generally of this city. His fatal disease was probably fulminating appendicitis.

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LUNG FEVER.*

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Pneumonia ranking next after consumption, as a death-producing agent in this latitude, and being so very prevalent, particularly in the winter months, is certainly a disease demanding especial attention. Mention is made of it, though very obscurely, in the writings of Hippocrates. The term "*lung fever*," or *pneumonia*, was, however, only applied to it some hundred years ago, indicating the very prevalent belief that it was a specific affection, and particularly affecting the pulmonary structures. Mention is made of *epidemics* in early times, the symptoms of which resemble those of "lung fever" of the present date; and in the latter part of the eighteenth century an epidemic of "lung fever" raged in Rome, and was, as its modern successor, very fatal. The studies of Lænnec—the discovery of the *crepitant râle of pneumonia*—gave us an accurate means of differentiating this from other pulmonary complaints, and hence from the beginning of the nineteenth century dates our accurate statistical information as to this fever. It was he (Lænnec) who described the crepitant râle, and his description has to this day remained unaltered.

The disease has been *defined* as one of "severe febrile symptoms coming on suddenly, attaining in a very short time great intensity, and undergoing a sudden abatement between the fifth and sixteenth day." But as "lung fever" occurs in the strong as well as in the debilitated, the definition must be modified to suit the circumstances; hence the modern clinical definition of *two forms* of pneumonia—*sthenic* and *asthenic*, or *typhoidal*—the two forms differing one from the other in degree, but not in kind.

The *asthenic or typhoid variety* occurs in subjects debilitated by disease of any kind of long standing, as well as in those who are advanced in years.

One thing is certain to the observation of the physician in treating the two forms, and that is the practical *universal fatality of the subject of typhoidal pneumonia.* The fatality may be accounted for in that, first, the pneumonia occurs in many persons already worn out by various ulcerative processes of the body; second, persons already the victims of specific fever, with lung fever superimposed; third, persons suffering from circulatory and renal disturbances, caused by their long standing tissue degeneration, gradual but sure; and when the victim of *sthenic* pneumonia, who does not survive the attack, he does so by the rapid and exhausting demands made upon the constitution as a result of the diseased process in its severity.

It is not necessary to tarry long in the discussion of the *ordinary symptoms of pneumonia*, save to mention the usual flushed dusky face, the anxious expression of countenance, the tendency to "dorsal" position, the indication of pain in the chest, the restricted respiratory capacity, the prostration like that of typhoid fever, though the mental capacity is much less blunted. The hurried respiration and the facial expression are influenced by the pleuritic pain, so frequently noticed; the skin is hot, dry and pungent; the pulse possibly soft, may be, is not keeping exact proportion to the rapidity of the breathing. The breathing disturbance is rather due to the inability to proper inspiratory power than otherwise, and to the loss of air space for respiratory purposes in the involved lung. The temperature, say 103°, or thereabouts, which has risen suddenly, bears a disproportion to the pulse and respiration; the possible history of sudden onset, chill, fever, pain in the side, and generally the placing of

*Read at a meeting of the Medical and Surgical Society of the District of Columbia, February 3, 1898

the whole sickness as directly due to some imprudence and then taking cold are other features. The cough, in its various changing characteristics, its irritability, and the exhaustion produced by it, the peculiar expectoration, its color, its consistency, its tenacity, and the various shades of these characteristics, are too familiar to the practicing physician to be dwelt upon—though these usually present symptoms may be, for the most part, absent, or only present in slight degree. The kidney changes, absence of chlorides, presence of albumen and the decrease in quantity, then, on the return to health, the return of those substances absent, and the absence of pathological characteristics, are familiar facts.

The fever, per se, is a matter of much interest —usually high at first, irregular in daily changes, generally less in the morning than in the evening, with remission on the seventh day. Very high temperature is frequently noticed, the fever at times being 107°, though, unlike many other fevérs, the temperature is frequently disproportioned to the gravity of the symptoms present.

As a symptom to be depended upon, *the pulse* is much safer, as indicating, by its rapidity, the volume, and, characteristic, the degree to which the body and the vital organs—particularly the heart—have been subjected to the influence of the pneumonia toxines. A *continued rapid pulse* is always a cause for anxiety. An axiom is to the effect that one-third of those whose pulse keeps above 120° will die. *Intermittency of the pulse* is always of very bad import, though this characteristic is generally noticed as the disease progresses, rather than at the outset of the fever.

The *disturbed digestion*, the torpidity of the bowels, the concomitant conditions; and in persons, particularly the victims of alcohol and kidney diseases, the *nervous symptoms*, the headache, the delirium present in one case or another, in all their various forms, are oftentimes symptoms of grave moment.

On *examinatian of the chest*, the crepitant râle, the flatness on percussion of the affected area, the passing of the râle on consolidation being completed, the tubular breathing, the return of the râle as resolution comes on, and with it a return to the normal chest note, are important points in the history of the case; as a rule, these signs are unilateral, and dependent upon the type of person above noted, as to whether they are well marked or obscure. Then the critical fall of temperature between the fifth and the eleventh day, with its well known concomitants, or the gradual subsidence noted in so many cases—according to some authorities, this termination being present in 40 per cent.—are parts of the record of the disease. Should, on the contrary, the person not recover from the disease by one of the methods noted, death in time may supervene by stoppage mechanically of the pulmonary air cells, causing failure of respiration; or by ulcerative destruction of the pulmonary tissue; or by exhaustion of the person's vital powers, and consequent weakening of the heart. The more of lung involved, the greater the danger; the less tissue involved, the better the outlook.

In this connection, the *following cases* will be of interest:

Case I.—A. B., age 17 years, entered Providence Hospital, temperature 105°, pulse 126, respiration 26, in a semi-stupor; roused with difficulty, sick three days. History of exposure to cold. No signs of cyanosis. Tongue heavily coated. Some pain in abdomen on pressure. Constipated four days. Pneumonia of right lung from apex to base. Second stage: Expectoration scanty; when not in stupor, quite delirious and had to be strapped in bed; ordered sponge bath every four hours; cathartic of calomel and salines; cotton jacket to chest; cold to head. The following morning temperature 102°, pulse 120, respiration 18 and deeper. Fifth morning, temperature normal. Case made an uninterrupted recovery. On decline of temperature he slept, except when awakened for food, for three days and nights steadily.

Case II.—James F., aged 80, entered hospital when ill forty-eight hours; fever not higher than 100°; pulse 120; respiration 28, and shallow; pulse soft and thready; harrassing cough; much mucus in chest; unable to expectorate; low delirium; subsultus tendinum; bowels sluggish; gradually sank, and died on eighth day of the disease in comatose condition. Fever never higher than 101°. Physical signs of pneumonia from apex to base confirmed by autopsy.

Case III.—Boy 20 years of age; previous history good; entered hospital when three days ill; right pneumonia apex to base; temperature, 105°; pulse, 120; respiration, 32; delirium; respiration free from pain; marked constipation; scanty expectoration. Cotton jacket applied; liquid diet; strychnin sulphate administered; mercurials and saline used. The next morning temperature 103°, pulse stronger, respiration deeper. For sleep, Dover powders 10 grains every six hours if necessary. Fifth day crisis; uninterrupted recovery.

Case IV.—M. C. M., age 78 years; rheumatic history; phlegmasia alba dolens for

some years. Contracted heavy cold apparently Christmas, 1891; temperature, 100°; pulse, 120; respiration, 32; irritating cough; constant pain in side; scanty expectoration. Fever ran a course from 100° P. M to 99½° A. M., and at no time was higher than 103°. Cough and exhaustion increased rapidly, as also breathing and pulse; delirium, stupor and death on seventh day of disease. Symptoms very poorly defined throughout. Treatment, cotton jacket, strychnin as required, supplemented by digitalis, calomel and saline.

Case V.—T. S. B. Addicted to opium habit. Drunkard for twenty years; addicted to cocaine, and very heavy smoker; suffers from valvular disease of heart, following rheumatism some years since. Now has cardiac dropsy extending up to abdomen; is ruptured; also has hydrocele; kidneys also extensively damaged. After having been under the writer's care for some time, he was seized with chill, followed by temperature 103°; pulse, 126; respiration 28, and shallow. Signs of pneumonia of right lung apex to base, and condition gradually grew worse with rise of pulse and respiration and falling temperature—delirium, stupor, uræmic coma, and almost total suppression of urinary secretions. Died on the eighth day. Necropsy: solid right lung, pleuritis of same side, adhesive pericarditis of adjacent pericardium, fatty heart, mitral regurgitation, large right kidney; extensive ulceration—tubercular in character—of bowel; deposit of tubercle in right lung; cirrhotic liver.

We might make a brief mention of some of the more *prominent complications*, as pleurisy with or without effusion; the occasional tendency to pericardial involvement and myocarditis; the not infrequent gastric and intestinal complications; the presence of pre existing cardiac lesion, organic and functional,—both dangerous by reason of the sudden tendency to heart failure, and the tendency to aggravate existing renal disorders; finally alcoholism in its various forms, and the superimposition of lung fever upon any acute or chronic ailment —each and all greatly affect the result; not infrequently nervous complications, such as meningitis, hepatic disorders attended with jaundice, tonsillitis and parotiditis are also to be recognized

Experiments have recently demonstrated that *one attack of pneumonia may, in some persons, render them for a time free from a second attack*, while in others no immunity is given; and from a practical standpoint, the immune period is sometimes so very short that one attack may be said to be no protection from a second. Indeed, too frequently do we come in contact with persons who have had attack after attack. Unless attention were called to this matter we are apt to be under the impression that one attack renders the body less liable to withstand the inroads of the germ of the disease. In the cases coming under my observation the second and successive attacks have been in every way much more severe. No authentic record is at hand to show how many attacks it might be possible for a person to have. But winter before last the writer had a man under his charge who survived his *fifth attack of pneumonia*—the other attacks being verified by the various hospitals in which he had been a patient previously while suffering from the disease. In general, a second attack is quite common; a third less so, though should we have any accurate information at hand, a recurrence of the malady would be much more common than it is really supposed to be.

The question of recovery in some individuals serves to bring up the after effects of pneumonia, and the prominent part played by constitutional tendencies and, possibly, latent tuberculosis Then, again, there may result loss of body vitality and consequent preparation, so to speak, of the body, for the reception of the germ of tubercle, and its consequent rapid growth under favorable conditions. The frequency of such complications in cases where resolution of the affected lung is delayed, the development of pulmonary abscess, and the appearance of pulmonary gangrene is sufficient to keep the physician constantly on watch for them.

PROGNOSIS.

Many factors have to be taken into consideration in the outlook of the case as to recovery—among them alcoholism, both acute and chronic. In case of this complication, so to speak, its presence serves only to aggravate the disease in every symptom, to cause a gradual stoppage of the body secretions, and to increase the danger of weak action of the heart. Indeed, it is too well known that, for practical purposes, alcoholics when seized with this disease generally all perish, because of the lack of strength to withstand the strain until the time for the termination of the disease process. Bright's disease, so very frequently associated with alcoholism, also plays a common part in the high mortality, and the symptoms due to the same are in every way aggravated and intensified by the superimposition of pneumonia upon it. Steady high pulse rate, say over 120 with decrease in the pulse pressure, and intermittency and irregularity in the pulse, are gener-

ally a very bad augury, as they indicate general progressive cardiac exhaustion. Early cyanosis of the face and extremities and other signs of depleted circulation may be likewise interpreted as unfavorable; and rapid, shallow respiration—regular or irregular—though for practical purposes, respiration over 30 to 35 to the minute, generally give notice of almost invariable dissolution; while a pulse which will remain at 120 or over may be interpreted in the same way Persistent high temperature is a source of danger in the tendency to exhaustion; and persistent rise of temperature also shows us as to the extent of lung tissue involved. Basic involvement is more fatal than apicial; total involvement more than local, as also bilateral over unilateral.

Pneumonia is also a disease which increases its mortality with advancing years, though this is possibly due to the habits of the person attacked rather than to the age; but in fact, after sixty years of age the attack generally proves fatal; so that pneumonia has been called the natural end of an old man. It is well to be on the lookout also as to prognosis in that, in persons complicated by chronic ailments as above described, pneumonia generally assumes the adynamic type and is very frequently difficult of detection. When complicating acute febrile affections, the death rate is usually very high, as evidenced by typhoid fever when pneumonia supervenes in the course of the disease. Pneumonia in children is generally accompanied by marked symptoms referable to the nervous symptoms, and by obscurity and difficulty of recognition of the physical signs. Again, the relative mortality in children due to the lack of constitutional taint directly influencing the course of the disease, is by comparison small. The writer was very much impressed with the fact that the relative mortality in children was very much less than in adults. When connected with the Woman's Dispensary during the winter, he had many cases of pnemonia in children brought under his observation—as a rule among the very poorest class. They were, as a rule, seen but once; generally treated by free stimulation with brandy, cotton jacket for chest, cathartics as required, and liquid diet. The parents generally reported their condition every other day to the physician on duty, and even under these conditions our mortality was but about 15 per cent.

Pneumonia, by the history of epidemics prevailing in jails, asylums, and among communities, whose general hygienic conditions are poor, has come to be regarded as epidemic under certain circumstances. In this connection a very notable report is made of an epidemic that prevailed in Iceland in 1863, closely upon an epidemic of influenza. One is also reported as having occurred among the Twenty-second regiment of British infantry, stationed in New Brunswick, Canada, in 1867, when the men had for some time been forced to live in the most unsanitary conditions; in this case the mortality was quite high.

Coming from the community, so to speak, to the family dwelling, is only a small step; and the writer remembers a case where in this city a gentleman was stricken by the disease. He was nursed by his daughter, who had, by the way, a previous attack. She in turn on the ninth day of his disease was attacked; and the maid-servant, who was in attendance upon both the gentleman and his daughter, was in turn taken down with the disease. The gentleman died, the others recovered. Likewise a daughter in another family was stricken; her mother, who nursed her, was stricken, and a second daughter who nursed them both. They all recovered.

The writer has frequently noticed patients in adjacent beds in hospitals, stricken with the disease. They were, as a rule, of debilitated constitution. In the United States a very interesting epidemic occurred in the Kentucky State prison of Frankfort, in the winter of 1875, when, out of a population of 694 inmates, in an overcrowded building, there were 118 cases, and 98 of a specific type. In Middleborough, England, in 1888, with a population of 70,000, 369 cases occurred of asthenic type, with marked nervous symptoms, and the detection in the sputum of the germ of the disease. Epidemics have also been reported through Northern Germany, Denmark, Russia, Sweden and Siberia.

As the result of careful study, pneumonia may be placed as a contagious disease, transmitted from one to another through the agency of the ordinary carrying agents for poison—in clothing and other articles, the person so attacked not having been exposed to the disease at all. The same rules governing contagion in any disease is likewise applicable to pneumonia.

TREATMENT OF PNEUMONIA.

Pneumonia being a specific disorder, due to the action of a specific germ, the treatment may be said to consist, as in typhoid fever, in efforts to sustain the general nutrition of the body until the progress of disease shall have time to exhaust itself, and allow recovery and tissue repair to take place. Even with this rule in view, each individual case must be

treated by itself, and symptoms looked out for as they supervene.

Rest may be said to be the foundation principle of all plans of treatment made use of in the disease—not only rest for the body in general, but especially for the structures in the chest. In carrying out this principle, we are called on to afford relief for the pain, to secure sleep, to feed the exhausted tissue, to control the fever, and, when nature demands it, to stimulate. The pain—so distressing and exhausting, and so much a matter of hindrance to the breathing—though not always to be relieved, may yet be alleviated, and thus a certain amount of rest secured. Hot applications, hot turpentine fomentations, sinapisms, dry cups, local application of iodine, cantharides, and frequently the application of warm poultices to the chest, bring about the desired result. Cold will, at times, do the same, and also reduce the temperature; though the application of both these agents will demand skillful assistance, that in their application the comfort of the patient be not disturbed.

Pneumonia is now believed to be due to a micro organism—the micro coccus Pasteurii, discovered in 1880. This organism, though as yet not always found in the person affected by the disease, is acknowledged, nevertheless, to be always present, the failure to find it being due rather to its short vitality, and to the fact that it disappears very quickly under unfavorable conditions. The germ is found in the blood in some instances, as well as in the diseased pulmonary tissues, and gives us a clue to the seeming secondary infection which sometimes occurs. By reason of its presence also in the blood, that fluid is more quickly coagulated than naturally, while the number of leucocytes is increased. Indeed, some are of the opinion that where there is only slight leucocytosis there is a good outlook for recovery, provided the individual was previously healthy. When there is no leucocytosis, and the subject was unhealthy, there is very slight chance for recovery; but when there is moderate leucocytosis, and a good previous history, there is gradual recovery, but not a very vigorous reaction toward it. The organism is noted in human saliva before and after infection for some time; and this explains why some persons seem to take pneumonia after the subjection of their body to some devitalizing cause, and the consequent lowering of its vitality.

Should the remedies made use of for the relief of *pain* fail, local abstraction of blood, in small quantities, at the seat of pain is often of assistance; and, as a last resort, the injection of morphine may be used with caution, and in moderate dose.

The *cough*, which is another source of exhaustion, demands attention. Generally, the agents resorted to for the relief of pain will answer the same purpose here as there. The general inutility of cough-mixtures and agents acting mainly on the bronchial mucous membrane, is now acknowledged by every one.

For the gastro intestinal tract, attention should be given to the bowels—their regulation as far as consistent with the case, that they may be rendered better prepared for the assimilation of food. Here mercurials and salines seem to be the agents which will give most relief.

Then the proper and regular administration of *food* in suitable quantities, at proper intervals, should be our constant care. In general, the same rules observable as to typhoid fever, will suffice here; and also the rule laid down in typhoid fever as to the use of alcohol, is especially applicable in this form of fever.

Then the *temperature of the sick apartment* is to be looked after—always bearing in mind the irritating quality of air to an inflamed respiratory tract, and the necessity for its purity, at the same time that a draft is avoided. By removal of pain and the dyspnœa, one goes a long way to the assistance of nature to procure sleep to the system. Bearing in mind that in most instances the inability to procure rest is due to exhaustion, stimulation and increase in the strength will be very apt to bring about more beneficent results than the use of narcotics. These latter usually only suffice to dull the symptoms and to mask the causes producing them, and in the long run are of very little utility, and are of doubtful value. These means still failing to produce the desired effect, resort must be had to the injection of morphine hyperdermatically as required, but this procedure must be resorted to only after due and efficient trial of other means.

The *fever* oftentimes demands attention by reason of its height. Sometimes accompanying gastro intestinal symptoms—due either to lack of secretion, or to too much secretion—and high temperature, when not accompanied by signs of rapid disorganization of the pulmonary structure involved, may be treated by cold sponging after the rule in typhoid fever. But when rapid pulmonary disorganization is threatened, the local application of cold through the agency of the ice-pack, and wet blankets, will answer best.

At present, *chemical antipyretics* are of doubtful value. While reducing the temperature at

times quite markedly, they are often followed by depressing results, such as collapse and exhaustion; and in the long run, as a rule, do more harm than good.

Should *delirium* supervene, this may demand attention. Active symptoms of this kind demand stimulation, being always attended with exhaustion, yet as a rule this is the form usually met with early in the disease. In this form, in most cases, there is passive delirium, or delirium of the typhoid type, when demands are made upon us rather to take care of the surroundings of the patient, give perfect quiet, and avoid, as much as possible, external exciting causes. And again, should these agents fail to produce the desired effect, morphine is of advantage, due care being had in its administration.

Dyspnœa, rapid in rise, very marked and sudden in its onset, can be controlled by the agents usually resorted to for the relief of pain. But dyspnœa slow, steady, and gradually increasing, accompanied with signs of failing circulation, is of very bad import. Save a slight respite—say for a few hours—by the abstraction of a quantity of blood (the person's general condition warranting it), dyspnœa can not be controlled, or relieved, and generally gives warning of a fatal termination. In cases of urgent dyspnœa, not attended with signs of cardiac failure, with or without hyper pyrexia, the writer has found oxygen gas by inhalation of benefit, assisting nature to tide over the crisis, and giving the impaired respiratory functions a rest. But for the dyspnœa arising from other causes, accompanied by œdema of the lungs, or when they are choked by mucus which the system can not throw off, this agent is of no utility whatever, save to prolong life for a few hours. Hysteria, uræmia, heart disease, distension of the bowels with gas, abdominal tumors, chronic pulmonary complaints, such as emphysema, must be looked for and appropriately dealt with according to the exigencies as they arise. Generally in persons of an alcoholic constitution, stimulants must be resorted to, to prevent the flagging of the heart and to preserve the vitality of the body in as far as possible. They should be given for effect—in most cases freely—for without them there is but one thing in view for the case, and that is rapid exhaustion and sudden death.

There is one symptom which frequently manifests itself very suddenly, and most unexpectedly, as well as slowly, and that is *cardiac exhaustion*. This seems to be due in a measure to the strain thrown upon the heart through the embarrassed circulation within the pulmonary area, and also through the direct action of the poison. This is the result of the action within the body tissue and on the body tissue of the pneumonic organism, and is, in fact, with its concomitant symptoms, to be most dreaded in this disease. To ward it off, to stand it off, and to guard against its sudden on-coming, should be our care under all circumstances. For this purpose, *strychnin*, continuously administered in the 1-30th of a grain dose, every four or three hours, as occasion demands, has, in my hands, afforded the best results—there being less over stimulation from it and less disagreeable effects than from other drugs so generally used. Next stands *strophanthus*, both as a substitute and as an adjuvant when required. *Digitalis* has proved in my hands less liable to control in its action—more liable to produce over cardiac action, and hence exhaustion, than these other agents; and when we take note of its tendency to gastric derangements it is still more unsatisfactory. *Quinine*, in proper doses, is also excellent in cases requiring cardiac stimulation—being safe and steady.

As temporary agents for the time being, and of use in emergency, the volatile *salts of ammonium* are excellent. *Nitro-glycerin*, both as a cardiac stimulant and also as a capillary dilator, is also of great service, especially in those cases where there is capillary contraction at the periphery of the blood vessel, and tendency to venous stagnation and circulatory disturbances, characterized by the tendency to cyanosis, temporary or permanent. Indeed, in these cases the poultice or hot water tubing, applied to the chest may be of service also, though these last expedients serve only a temporary use.

As to the *treatment of the complications of pneumonia: Bronchitis* demands attention, especially when the pulmonary area is emphysematous; also when the sufferer is very young or very old. When the patient is a victim of cardiac asthma the outlook of the case is quite dubious, and here under no circumstances should depressants be allowed. When *acute rheumatism* complicates the case, caution must be used in administering rheumatic remedies which have a depressing effect on the heart.

Delirium tremens will supervene frequently in alcoholics; and when want of sleep, due to prolonged insomnia appears, as a factor to be dealt with, the use of alcoholic stimulants and hypnotics, may be resorted to in the hope of producing relief and rest and sleep.

Hydro thorax demands attention when the fluid is enough in quantity to impede pulmo-

nary action. When necessary, it is better to withdraw the fluid as gradually as possible from the chest cavity, than to withdraw it in large quantities at a time, and thus avoid, as far as practicable, the embarrassment of the heart and the lungs so often supervening as a result of destruction of equilibrium of the blood pressure.

Finally, *pulmonary abscess and gangrene* at times supervene. As a rule they are both very slightly amenable to treatment. The patient passing through the pneumonic process, with these complications superimposed, generally dies from exhaustion.

1221 *N street, N. W.*

Discussion of Pneumonia.

Dr. Mayfield said, while the subject is a very interesting one, the paper leaves but few points for discussion. It had been his good fortune, during the winter of 1880–'81, to attend the clinical lectures of the elder Flint, and he well recalled the emphasis with which he described pneumonia as a disease of specific infectious origin. Dr. Flint stood apparently alone at that time in advocating such a theory. The correctness of his views appeared then, as now, to be borne out by the pronounced general symptoms at the onset of the disease. The constitutional disturbance, the elevation of temperature, the pulse, and rapidity of respiration are out of all proportion to the local disturbance found at the beginning of the attack.

The profound impression upon the nervous system is, too, by no means usually in keeping with the amount of lung involved; slight solidification even in the apparently strong is often attended by marked fever and delirium, or marked involvement by but slight fever and nervous disturbances.

He does not look with favor upon the use of alcohol in pnenmonia—especially in large doses, such as are too often given—even to the extent of one ounce of whiskey every two hours. Alcohol induces lung congestion, and, when used at all, it should be very sparingly. He considers that there are other therapeutic agents of vastly more value, such as strychnia, ammonia, digitalis, and nitroglycerin. The latter he has found of considerable benefit in small (1-200 grain) repeated doses in controlling delirium. He looks upon chronic alcoholics as the patients for whom alcohol is particularly indicated, but, even in such, very large doses will be productive of harm rather than of benefit.

Dr. James D. Morgan said it was Austin Flint who declared that 70 per cent. of pneumonia would show infection. Lænnec had, years before this, attributed the cause of pneumonia in many cases "to a deleterious miasm, which entered the system by means of the cutaneous or pulmonary absorbents. The generally accepted cause is believed to be due to a variety of micrococci, principally the diplococcus pneumoniæ. Sternberg leans to the diplococcus as the sole agent, and explains how, when sought for, its absence in many cases of pneumonia may be explained by the readiness with which it dies in the tissues when the surroundings are unfit; it leaves, though, an exudate which is a favorable nidus for the Friedlander's bacillus and other saphrophytes. Southworth says one-third of the cases of catarrhal pneumonia in children of the first two years of life will show the diplococcus pneumoniæ. Of the exciting causes of pneumonia, it seems we are very often mislead, as gout is about the least of the excitors. In the reports of St. Thomas' Hospital, only one case out of 565 of pneumonia showed any history of gout; and of 143 fatal cases, only 8 had evidence of gout.

The importance of critical observation in treatment is forced strongly upon us, not only from the high mortality, which seems to have remained about the same from 1822 to 1889, although the variety of doctrines and medicaments have often been revolutionized, but from the great prevalence of the disease—7 per cent. of all deaths being due to pneumonia. The danger from enfeebled heart and hence deficient æration is accepted by all as the danger to be ever watchful of. So we should guard and store all the strength of our patient for this critical period. Bullinger opposes venesection, because within a few hours a practical intravisceral hemorrhage of from two to four pints will take place itself. Stimulation, when necessary, with strychnia, nitroglycerin, whiskey, etc., and a diaphoretic and diuretic treatment, with great caution in the use of opium and digitalis, have always been his guides. Cold is often of use not only locally, but generally, and he has seen good effects when the cough was tight and depressing from alkalies and carbonate of ammonia.

Dr. Kober referred to the two great dangers to the heart in pneumonia, viz: the extent of the inflammation and correspondingly diminished respiratory capacity, and the accumulation of toxins in the blood. While we could not always limit the extent of consolidation, he said we could at least prevent the accumulation of toxins by the judicious employment of diaphoretics. Such, indeed, had been the method recommended by Bennett over thirty

years ago; and only within the last few months modern science had proven that toxins are eliminated in the perspiratory secretion, and thus explained the rationale of Bennett's eliminative treatment.

Dr. S. S. Adams said in 1889, when Dr. L. Emmett Holt, of New York, read a valuable paper on pneumonia in children before the American Pediatric Society, he expressed the opinion that croupous pneumonia was a rare disease in young children in this locality, and that the large number of cases observed by Holt were due to the climatic conditions of New York city. Dr. Adams did not base its rarity upon his experience alone, but upon that of his predecessors in the Childrens' Hospital. Since that discussion, he had modified his views as to its frequency, and now asserted that this form of pneumonia was by no means uncommon in infancy and early childhood. If this change of view were based exclusively upon his experience, it would be reasonable to suppose that his powers of observation had materially developed during the past eight years, and that he was better able to make a differential diagnosis now; but as his views at that time accorded with careful clinical observers, he was inclined to attribute the greater frequency of the disease now to a change in the climatic conditions prevailing in this locality.

As Americans, we should award to Surgeon-General Sternberg the honor of the discovery of the micro-organism of pneumonia.

The physical signs are as easily demonstrated in children as in adults, and are identical in character. Hence, there should be no difficulty in making a diagnosis, provided care be taken in the examination.

The duration is somewhat shorter in the child, being in the greatest number about five days, seldom lasting longer than seven days, and invariably terminates by crisis. Recovery is the rule, although the disease may successively involve the lobe of both lungs.

Many cases of so-called grippe are cases of croupous pneumonia; he had seen a number of these mistaken conditions when called in consultation.

The routine treatment in the Childrens' Hospital is practically the same in the services of Dr. Archer and himself:—Absolute rest in bed; liquid diet, in small quantities, frequently repeated; cotton jacket, with oil-silk or cheese-cloth covering, and stimulants. Ammonium carbonate is almost invariably used, and alcohol and other stimulants resorted to later. In cases in which the engorgement is extensive and dissolution impending, the hypodermatic administration of nitroglycerin, in relatively large doses, may prove beneficial. He was sure lives had been saved by its judicious use.

We are too apt to place too much stress upon the fever. If the temperature is 103°, 104°, or even 105°, and there are no cerebral manifestations to indicate that it is doing harm, there is no necessity of resorting to either internal or external antipyretics. Let the patient alone until there is some indication to lower the temperature, and then resort to rational means. Those drugs which reduce the temperature rapidly are dangerous, and almost invariably impair the heart's action. Phenacetin is the most reliable of them, but it should always be given in conjunction with a stimulant—preferably an alcoholic.

He had used the various external methods of reducing the temperature, with the single exception of the ice pack. He preferred the bath-tub.

He exhibited a number of fever charts, showing the effect of hydro-therapy on the temperature and the termination of the disease by crisis.

Dr. Robert Reyburn said that one of the most discouraging features in the treatment of pneumonia at the present day is the fact, which has been proven by various observers, that the mortality from acute pneumonia is just as great, if not greater, than it was forty years ago. The mortality of acute or croupous pneumonia is very great among those who habitually use intoxicating drink. When acute pneumonia occurs in this class of patients, the disease is very often fatal, and seems hardly amenable to treatment. The mortality occurring in this disease in young and healthy adults is still very great, and does not reflect much credit upon the practice of medicine at the present day.

It is his opinion that the entire abandonment of venesection as a method of treatment in the early stages of pneumonia has been bad practice, and should be revived under proper restrictions.

In pneumonia involving the greater part of one lung, or parts of both lungs, we have the amount of air space for the ingress of oxygen diminished one-half, or it may be two-thirds. At the same time the heart is pumping the blood with greater velocity and in greater quantity than in health. The result of this is that the patient is asphyxiated by the failure of the lungs to receive the proper quantity of air to purify the blood contained in the lungs. He would strongly recommend, therefore,

bleeding, followed by the administration of oxygen by inhalation freely in the early stages of acute pneumonia occurring in young and healthy adults.

The other plans of treatment and management in cases of pneumonia have been so thoroughly dwelt on by the other speakers that it is unnecessary for me to say anything further upon them.

There is one point of diagnosis, however, that is often overlooked, and this is the testing of the urine of the patient for the absence or presence of chlorides. So long as exudation is still going on in the lungs, the chlorides are absent from the urine; just as soon, however, as exudation stops and the disease becomes stationary, the chlorides will reappear in the urine.

Dr. Vincent, in closing, said, with regard to the use of whiskey, as indicated by Dr. Mayfield, he did not mean that a man must be drugged with it, but simply that, if a person was of an alcoholic constitution, whiskey should be given for its general tonic effect, and used throughout the disease when required. With this end in view, he agreed with Dr. Mayfield entirely. Referring to the remarks of Dr. Adams upon pneumonia in children, when Dr. Vincent had said pneumonia was hard to distinguish at times among them, he meant by reason of the restlessness of the child and the difficulty of their allowing a physical examination—not that the signs of the disease were indistinct in themselves.

THE X-RAY AS A FACTOR IN DIAGNOSIS.

By J. C. BODOW, M. D., Roanoke, Va.

S. H. L., of Franklin county, Va., was brought to this city by Dr. C. C. Greer, February 25th, 1898, with the intent of locating with the X ray, a bullet which had entered the patient's foot two and a-half years ago, in order that it might be removed He suffered continuously, he said, night and day, and had been subjected to this pain ever since the wound had been inflicted.

He was taken to Rebekah Sanitarium and examined with the X-ray by Drs. C. G. Cannaday, Greer and myself with the results given below.

This man had been treated by a physician at the time of his injury, and the ball was "probed for," but failed to be located. The ball entered the inner aspect of his left foot at a point about midway between the two extremities of the first metatarsal bone and radiated across—whether the plantar or ventral aspect of the foot I am unable to say. Nevertheless, it finally lodged about the center of the metatarsal bone of the small toe, where it was definitely located with the fluoroscope and X-ray. We all examined the patient, and with the aid of this instrument, we very plainly and easily learned the position of the ball.

On account of the pain and inconvenience, and at the patient's request, we decided to operate immediately. The necessary cleansing and antiseptic precautions were gone through with and the patient removed to the operating room. As we had a strong, robust, nervy subject, we deemed it unnecessary to use a general anæsthetic; eucaine was chosen in its stead.

Dr. Cannaday, assisted by Dr. Greer and myself, commenced the operation. An incision was made on the outer aspect of the last metatarsal bone, and a thorough examination was made of the parts for the bullet, without, however, being able to distinguish anything abnormal; so we wheeled the patient out and made another examination with the X-ray. The foreign substance was again plainly seen.

An incision was now made to the inner aspect of the bone and a careful examination made. We dissected above and below the bone, and its minutest part was thoroughly explored, but we could discover nothing except a slight prominence of the bone.

We again became a little skeptical, for Dr. Greer had not seen the patient when the injury occurred, and as there was such slight prominence (a prominence which might easily have been caused by an ordinary fractured toe, for instance,) we began to speculate as to whether that ball was really in the man's foot after all. For the third time we decided to use the X ray.

As in the former instances, the ball was beautifully and clearly depicted, definitely in a line with this metatarsal bone. On the strength of this, after locating the exact position, with the point of a metallic instrument, as indicated by the X-ray, we prepared to, and did drill directly over this point, and much to our delight, after the drill had penetrated the bone a short distance, "we struck lead." The chisel and mallet now afforded us relief by removing the necessary amount of bone. Strange to say, the ball was found lying longitudinally in the long axis of the bone, which readily accounts for the comparatively small increase in the size of the bone. We were compelled to remove rather much of this bone on account of beginning

osteitis, which had set in. The diseased portion was thoroughly chiselled away and curetted; the wound treated as an open one, was packed with 10 per cent. iodoform gauze, and antiseptically dressed, after having been carefully cleansed and irrigated with a bichloride solution.

What interests us most in this case, and what tempted me to record it is, the advantage of the X-ray as a factor in diagnosis. This man had been examined by physicians, and good ones, too, but without avail, and he had to suffer for two-and-a-half long years, and his suffering was the more intense since he was aware of the cause of his trouble, and, as he said, he knew its location. He was "probed" and palpated very many times; still he grew progressively worse, until his physician decided to have the X-ray used on him. This cleared up the diagnosis in a moment, definitely portrayed the situation of the impending trouble, and made sailing plain, where it had before been indeed difficult; we might say, *impossible.*

521 *Church Avenue S. W.*

TWO CASES OF INJURY TO THE SPINAL CORD--1. HEMI-PARAPLEGIA. 2. SPINAL HÆMORRHAGE*.

By E. L. TOMPKINS, M. D., Washington, D. C.

Professor of Nervous Diseases, Columbian University; Attending Physician to the Department of Nervous Diseases in Central Dispensary and Emergency Hospital, etc.

In reporting these two cases of injury to the spinal cord, I do not intend to go into every detail and bore the Society with every rise and fall of temperature, every change in medicine, etc., but will only mention the chief points of interest.

Hemi-Paraplegia.

The first case is that of a colored woman, aged 22, with a specific history and an eruption on the body.

On February 14th, 1897, she had a quarrel with a man and turned to run from him up the stairs. He plunged a knife into her back and escaped. She fell immediately and found herself paralyzed in her right leg. She was brought in the ambulance to the Emergency Hospital, and Dr. John Van Rensselaer, who was the emergency surgeon to the hospital for that month, was summoned. He found the knife still in her back, and had to go to the engineer for some instrument with which to pull it out, he being unable to do so with his hand. The wound, treated antiseptically, soon healed, and the patient was transferred to my department.

I found a cicatrix about one-half of an inch long, just to the right of the median line, on a level with the fifth dorsal vertebræ. There was total paralysis of motion of the right lower extremity, and total loss of sensation of the left side, extending from the foot to the sixth rib, or just below the left breast to the median line—the line of demarkation being extremely well defined.

We know that the spinal nerves do not rise exactly opposite their respective vertebræ, but a little higher up; so that a knife driven in between the fifth and sixth dorsal vertebræ would produce paralysis from the sixth dorsal nerve downward. We also know that the lower six dorsal or the "thoracico abdominal" nerves are distributed by their muscular branches to the inter-costal muscles and to the abdominal muscles; by their lateral cutaneous branches to the integument of the abdomen, as far as the edge of the rectus muscle and to the integument over the lower part of the latissimus dorsi, and by their anterior cutaneous branches to the upper part of the rectus and to the integument on the front part of the abdomen.

This patient, therefore, presented the condition known as *hemi paraplegia*, which is the result of a focal lesion in the dorsal region of the cord, involving only its lateral half. The lesion being below the cervical enlargement, there was no involvement of the muscles of the upper extremity, and being also below the cilio-spinal centre, there were no pupillary symptoms. The centres for the bladder and rectum being in the lower part of the cord, below the lesion, these organs were partially paralyzed.

For the reason that motor fibres, coming from the brain, decussate at the medulla and continue on down the cord on the same side, while sensitive fibres going toward the brain, do not wait until they get to the medulla to decussate, but cross over to the opposite side of the cord immediately, the patient presented the symptoms of paralysis of motion on the same side as the lesion, and paralysis of sensation on the opposite side. She was also extremely nervous and excited, as would be natural under the circumstances.

She was put on a mixture of sodium bromide and iodide of potassium, to be given three times a day. A hypodermic injection of morphia was given occasionally to relieve pain.

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* Read before the Clinico-Pathological Society of Washington, D. C., on February 16th, 1898.

On the 17th, as her bowels had not moved for three days, she was given calomel in one-fourth grain doses every half hour for eight doses, to be followed by sulphate of magnesia, but there was no effect. She then had an enema of soap-suds, but still no effect. The next day she had two enemata, followed by a large stool. During these days she voided urine involuntarily in bed.

On the 20th, she was continued on the iodide of potassium, and the bromide of sodium was reduced. On the 23rd, the iodide and bromide were stopped, and she was put on a mixture of strychnia, iron, and quinine, and the faradic battery was applied to her leg. This was kept up daily.

On March 5th, a mixture of bichloride of mercury and iodide of potassium was given after meals, and the strychnia, iron, and quinine mixture, before meals, continued.

On March 15th, she could flex the right knee slightly, but could not extend it; the anæsthesia remaining about the same.

On March 18th, there was exaggerated right knee-jerk and marked ankle clonus.

On the 19th, she could move the toes of the right foot, and moved the leg a little better; sensation remaining about the same.

On the 21st, she was taken down stairs, and the static electricity was applied.

On the 23rd, she could work the toes of the right foot very well, and move the leg easily, and could also feel the stick of a pin in her left leg on the outer side down to the ankle.

March 27th, she could feel a pin stick distinctly along the outer side of the left leg and thigh, moved the right foot with ease, could get into and out of a chair alone, but could not stand alone or walk. It was noticed that it took nearly three minutes for sensation to be conveyed from the leg to the brain—that is, when told to say as soon as she felt the pin stick, it would be nearly three minutes after being stuck before she told that she felt it. In health, tactile impressions are conveyed through the cord at the rate of 42 metres, and painful impressions 13 metres per second.

March 30th, she could stand full weight on her right foot, and could feel a pin stick distinctly all over the left lower extremity.

April 4th, the right knee-jerk still exaggerated, but ankle clonus not nearly so pronounced. Could stand full weight on right leg and walk with assistance. Sensation complete on the left side.

There was steady improvement from this time on, the patient walking about the ward and making herself useful. She was discharged on April 30th. She has appeared at my clinic a number of times to get medicine and electricity, and, although she has to use a cane in walking, she gets along fairly well.

Spinal Hemorrhage.

The next case is that of a young man, white, aged 27.

On July 4th, 1897, while bathing at Bay Ridge, Md., he dived from a short height into shallow water and turned his head upward very quickly. He did not strike the bottom or a rock or any piece of wood or anything. When he arose to the surface of the water, it was seen by his friends that something was the matter, and they immediately went to his assistance. He at first complained of feeling as if his arms were broken. His friends thought that he had "cramps," and rubbed him with sand, which abraded his skin. He was brought to the city on the train, and in the ambulance, to the Emergency Hospital.

On careful examination by Dr. W. P. Carr and myself, no fracture of the vertebræ could be discovered, although he complained of pain on pressure over the fifth to the seventh cervical spinous processes. There was complete paralysis of motion and sensation from the nipples down, as was also paralysis of bladder and rectum. He was a very intelligent man, and his mind was perfectly clear.

The diagnosis of *spinal hemorrhage* was decided on, and he was put on one drachm doses of the fl. ext. ergot every four hours, and an ice-bag to the nape of his neck. He was to be catheterized every six hours, and to have only liquid diet.

July 5th, the patient had not slept any and was very restless. The temperature was 102°F.

July 6th, the patient had complained nearly all night of pain in his arms and chest. The ergot was stopped, and an enema given. He was also given iodide of potassium gr. xv three times a day.

July 7th, the temperature had run up to 102°, although the enema had produced a good evacuation of the bowels.

July 10th, area of anæsthesia had extended rather suddenly upward about two inches, and his arms and hands were so weak that he could hardly lift them. The temperature had remained high. The pulse had ranged from 70 to 80, and respirations about 20. He had involuntary discharges from the bowels. The ergot was renewed and the iodide of potassium continued.

July 12th, temperature had fallen to 99°. The pulse and respirations had remained the

same, and involuntary actions of the bowels had continued. The ergot was stopped and the iodide of potassium was increased to grs. xx, *t. i. d.*

Knee jerk and ankle clonus about this time manifested themselves.

July 15th, temperature dropped to 97.4°, although the pulse and respirations remained practically unaltered.

July 16th, sensation to a pin stick was very distinct as low down as the tenth rib on the back and right side. The temperature had jumped up to 100°, and by the next day it was 103°. Involuntary discharges continued. The sulphate of quinine, grs. v, was given every four hours for two days, when the temperature was reduced to 98.7°. Then it was given three times a day; the iodide of potassium was continued. Galvanism was now given to the upper portion of the spine, and faradism to the lower extremities.

The patient had been put on a water-bed, and every effort made to prevent bed-sores, but the abraded surface over the sacrum had gotten much worse, and a bed-sore over each great trochanter had developed. Emaciation had been quite rapid.

On July 12th, each thigh, upper third, had measured 16½ inches, and just above the knee 12 inches, each calf 12 inches; and on July 26th, the right thigh, upper third, measured only 14 inches, just above the knee 11 inches, calf 10 inches, and just above ankle 6¼ inches. The left thigh, upper third, measured 15¼ inches, just above knee 12 inches, and above ankle 7¾ inches.

Although catheterization had been as aseptic as possible, cystitis developed. A number of examinations of the urine, made by Dr. Wallace Johnson, in charge of the laboratory work of the hospital, always showed about the same, viz., amber-colored, alkaline, sp. gr. 1022, albumen, heavy sediment of mucus, pus, and crystals of triple phosphates. No casts and no sugar.

By *July 20th*, the area of anæsthesia extended on the right side and back only as high up as the level of the umbilicus, and on the left side to two inches below the left nipple. All the muscles of the thigh and legs responded readily to faradism. The galvanic battery was still applied to the upper portion of the spine. On July 21st, sensation was distinct on the inner side of the right leg. The hands and arms had not improved—that is, some days he could lift them a little better than other days. Although quinine had been given three times a day, the temperature remained rather high, ranging in the neighborhood of 102°. The iodide of potassium had been continued.

The bed-sores had been dressed daily with bichloride of mercury solution and peroxide of hydrogen, and no sinus could be found anywhere. Quinine was given every 4 hours, hoping to reduce the temperature, and the bladder was washed out daily with a saturated boric acid solution. The temperature was not reduced, however.

By this time he was getting very pale and emaciated, and his appetite was lost almost entirely, so he was put on a mixture of strychnia, iron and quinine, and the frequent doses of quinine were stopped. This mixture was given before meals, and the iodide of potassium continued after meals.

July 29th.—He complained of pain in his toes, and on pinching him on inner side of right leg or thigh, or inner side of either leg, he could feel it, and would draw the leg up. There was sensation also to a pin-stick on both feet. His abdomen became very tender and tympanitic, so turpentine stupes were applied and a rectal tube introduced. The bed sores on the hips were improving, but the one on the sacrum was not, and, when irrigated, small pieces of dead bone would come away. The syrup of the iodide of iron was given instead of the iodide of potassium.

By August 6th, sensation was complete on both sides of both legs, but it was very noticeable that sensation returned much faster on the right side of the body than on the left.

August 9th.—The temperature shot up to 103.4° and remained so for several days. On pressing firmly all around the sore over the sacrum, which had now gotten to a large size, a drop of pus exuded. Passing a long probe through a very small canal, a large sinus was found under the gluteal muscles on the left, toward the great trochanter. I made a free incision, and a large quantity of green pus escaped. This was washed out with a formaline solution of 1 per cent., and packed with gauze soaked in formaline solution of the same strength. The bladder was irrigated with formaline solution of one-half of 1 per cent. This was done daily after that, and no more pus could be found. The dressing would be removed each day, perfectly dry and sweet. The bladder also seemed to improve now. In two days the temperature had fallen to 99.6°, but would go up one day and down the next. On August 25th, it was 97.6°. It then began to go up, a little higher each day, so that on August 30th it was 104.6°, by rectum.

By this time everything disagreed with him,

and nothing had the effect of making him sleep; sulfonal in large doses would make him sleep only an hour or two; a hypodermic of morphia had only a little better effect. His milk had to be peptonized, etc.

While his lower extremities improved so very much, both as to motion and sensation, his arms did not improve, but, on the contrary, seemed to get worse. He died on September 5th.

A post mortem examination made by Dr. Carr and myself discovered a long clot, intra-meningeal, extending from the fifth cervical vertebra to about the first dorsal. There was no fracture of any of the vertebræ. I removed a portion of the cord and took it to Dr. James Carroll, of the Army Medical Museum. I have received the following letter, which he has written me, and which shows that the degeneration, shown by staining the microscope, corresponds with the clinical symptoms.

1512 *Q street.*

WASHINGTON, D. C., *February 25th*, 1898.

My Dear Doctor: In response to your request, I submit the following brief remarks concerning the degenerations present in the spinal cord you refer to in your note of the 21st instant.

Unfortunately, the tissue was not properly preserved, the whole cord having remained in a small quantity of dilute alcohol for three or four days when it came into my hands. The case, however, seemed to be one of so much interest, that I determined to make the best of circumstances and try what histological preparations would yield; so portions were taken from the cervical, middorsal, and lower dorsal regions for the examination. After sections were mounted, it was found that the tissues stained so poorly by the ordinary methods that the finer structural details could not be studied, and the attempt had to be abandoned.

I noticed, however, in the solid pieces of stained tissue that the direct and crossed pyramidal tracts (except in the lower segment where the direct tract had disappeared) absorbed so much less of the coloring than the rest of the cord, that they were clearly mapped out, and I was led at once to examine these areas in particular for degenerative changes in the fibres. It was seen that the places of many of the nerve fibres were occupied by swollen, colorless, brightly refractive masses that had little more consistency than fat, yet could not be called hyaline, and the axis cylinders of these fibres had wholly disappeared. In the adjacent areas, many faintly stained axis cylinders could be recognized, and there were also many fibres that had undergone the same kind of degeneration.

I next directed my attention to sections prepared after Marchi's method for showing myelin degeneration of nerve fibres. Pieces from three divisions of the cord, which had been kept in a formalin solution, were transferred to Müller's fluid for a week, and from that into Müller's fluid to which nitric and osmic acids had been added, for another week. By this method the degenerated fibres stain as solid black masses, having the same appearance as fat stained with osmic acid. The non degenerated fibres stain only with the chromate, which imparts to them a pale, brownish color, and in cross section they may show a dark peripheral ring, but never appear as homogeneous black masses. In sections prepared in this manner the aggregations of blackened degenerated fibres were apparent to the naked eye.

Under the microscope they are especially numerous in the crossed pyramidal tract, about the same relative number occurs in the direct pyramidal tract, but they are less numerous in the anterior ground bundle. Passing over into the antero-lateral tracts, they are much more frequent in the ascending tracts near the surface of the cord, than in the descending tract lying within.

In short, the whole antero-lateral region of the cord from the anterior median fissure around to the posterior horn is the seat of more or less degeneration—much more in the pyramidal tracts, somewhat less in the ascending lateral tract which forms a connecting zone between them, and in the cerebellar tracts, and from these situations diffused throughout the adjacent paths in a less degree.

In marked contrast to the above is the picture presented by the posterior columns occupying the whole region between the posterior horns. In this area, every nerve fibre shows its axis cylinder, and there is an entire absence of the solid, blackened, degenerated masses above described.

I leave it for you to draw deductions from the lesions as compared with the clinical symptoms, and will consider it a favor if you will kindly correct any palpable errors in the above, which has been compiled rather hurriedly.

Yours very truly,

JAMES CARROLL.

Dr. E. L. Tompkins.

REFLEX HEMIPLEGIA.

By J. D. EGGLESTON, M.D., Hampden-Sidney, Va.

In October, 1897, J. H., aged 21 years, was brought to my office by his father for treatment. The patient was a strong, hale young man, with the exception of paralysis of the whole right side. There was total inability to use the right hand, and walking was difficult, even with assistance. Impressed with the healthy general appearance, there being nothing save the hemiplegia to refer the trouble to the brain, I examined the patient's mouth, and found the wisdom tooth of the left lower jaw exceedingly sensitive—so sensitive that he could not bear the pressure of my finger on the tooth, which was perfectly sound, and had attained nearly full growth.

Concluding that the wisdom tooth was the cause of the hemiplegia, I proceeded to extract it; but on occount of the patient's inability to bear the pressure of the forceps, I, contrary to my custom, administered chloroform to partial anæsthesia, under which I was able to place the forceps and extract the tooth. In ten minutes he said:

"Doctor, I am better already; see! I can use my hand."

I ordered the father to report to me in two days if his son was not entirely well, but said I thought there would be no more trouble. In this surmise I was correct, for in two days he was entirely well, and went back to work in a saw-mill as a log roller.

Having never seen a similar case, I think this one worthy of report to the profession.

BRIEF MENTION OF NEUROLOGICAL CASES SUCCESSFULLY TREATED.*

By IRVING C. ROSSE, A. M., M. D, F. R. G. S., Washington, D. C.

Late Professor of Diseases of the Nervous System, Georgetown University; Mémbré du Congrès International d' Anthropologie Criminelle; of the American Neurological Association; then New York Medico-Legal Society; Vice-President International Medico-Legal Congress, etc., etc.

At most of our meetings in the last few years, when the chairman announces the order for pathological specimens, we are accustomed to see such an array of the much abused uterus and its appendages as to lead more than one member to remark that a more appropriate name for this assemblage would be the Gynæcological Society of the District of Columbia.

To escape this facetious criticism and vary somewhat the monotony, I mention as briefly as possible a few observations from personal experience, which I trust may be timely, in view of the fact that the health reports of the last few weeks show the greatest number of deaths to be from nervous disease. In justice to myself, however, I am happy to say that at the present writing none of the death certificates bear my signature.

A few years ago, at a meeting of the American Neurological Association in Philadelphia, I read a paper on "Borderland Insanity," the cases therein cited as illustrative being from my own practice. Since then a number of the patients have died, others have stepped over the blending line, and a few have recovered.

Since recovery is the ideal goal for which all of us strive, I present herewith from a great number observed a few selected cases in which the pathological conditions became transitory and yielded to treatment.

Some time ago I was called in consultation by Dr. James T. Young to see a retired army officer who was suffering from the effects of an *occlusion of the middle cerebral artery.* For several days the patient had been hemi-plegic and unconscious, with stertorous breathing and inability to swallow.

Being questioned as to the prognosis, I advised the patient's family to prepare for the worst, and fully expected to find crape on the door next morning; but happily, owing to the revulsive effect of a turpentine enema that had been ordered, the patient regained consciousness, the symptoms gradually disappeared, and he ultimately made a good recovery.

This case is, however, not so exceptional as that of the father of a celebrated silverite senator who, in consequence of a *similar seizure, became hemi-plegic* at forty but *died* from the effects of being thrown from a horse *at the age of one hundred and three years.*

Another gross lesion of the brain somewhat similar was brought to me about two years ago by Dr. McComas from Western Maryland. The patient, a young man, had a history of domestic and financial trouble, and was *aphasic and agraphic*, a feature of the aphasia being inability to tell the time of day by a clock. A prominent physician who had been consulted in the case said the patient would be hopelessly demented within a month, and held out no hope but an asylum. My prognosis was, however, less grave, and was justified by the subsequent treatment; for the patient improved, and lately his father writes me that he is *entirely recovered*, Dr. ——— to the contrary notwithstanding.

* Read before the Medical Society of the District of Columbia.

In another case, the subject of a *lunacy inquisition* in one of the Washington courts, the patient's relatives were anxious to have him confined in an asylum. *I testified as to his sanity*, but other witnesses caused the jury to think differently. Subsequent events soon showed the utter mistake of the jury and the *correctness of my diagnosis.* The patient went traveling with an attendant and was soon discharged as sane.

Undue readiness to send patients to hospitals for the insane is much to be condemned. Not only do we know instances of simulated insanity being sent to such places, as lately happened in Washington in the case of a woman newspaper reporter, but other cases occasionally go which would fare better if treated elsewhere.

The following list of cases I have literally kept away from the asylum, and, perhaps, saved from a worse fate:

A young man, a clerk, sent to me by Dr. N. S. Lincoln, with a homicidal impulse. Recovered.

A patent attorney, sent by Dr. O. M. Muncaster. Recovered after two years' treatment. Has since married, and is rearing a family.

Insomnia and suicidal impulse in a business man of middle age; came at the instance of Dr. Smith. Recovered.

A case of meisophobia, or rupophobia, in a boy, the son of a Washington merchant. Recovery after crossing the Atlantic by a sailing-ship.

A boy, discharged from Garfield Hospital, had all the characteristics of that form of insanity of pubescence known as hebephrenia. The attacks were periodical, and during their continuance there was almost constant erection of the penis. The patient was much benefitted, and at last accounts was doing well.

Another case of the kind was that of a young man I was called to see in a college, near Baltimore. Making a good recovery, he has since become a newspaper reporter; and, at my suggestion, took to athletics, at which he is a great success.

The son of a livery-stable man brought to me lately was a sad instance of a case of sexual neurasthenia, with mental symptoms, which had been treated by one of the advertising quacks of this city, who told the young man's parent's that the insane asylum was the only recourse. After a few months' treatment, this patient was cured and is now working at his trade.

A case referred to me by Dr. Charles E. Hagner—that of a middle-aged man, who fancied he was going crazy, and would ultimately wind up in a hospital for the insane—made a good recovery after a few weeks' attention to his general health, and the enforcement of general analeptic measures.

The same may be said of an obstinate case sent me by Dr. Hammond. Being a man of means, this patient, characteristic of his class, went from one doctor to another, and finally striking my friend, Dr. Allan Starr, of New York, was advised by him to return to Washington and place himself under my care, with the further admonition that it is better to pay fifty visits to one physician, than to roam around the country and consult fifty different ones.

Another case worthy of mention in this connection, is that of a car-conductor, who was brought to me last October, supposed to be suffering from brain tumor, for which he had been actively treated with alteratives and large doses of iodide of potassium. On telling me that he sometimes had a seminal emission on looking at a pretty woman, I directed the treatment accordingly, and by December the patient had recovered.

I might also mention cases in the opposite sex that I have saved from the stigma of an asylum—notably those in which there was an hysterical element, a tendency to *sexual perversion*, or the peculiar nervous disturbance at the climacteric period.

The friends of a young woman with hysterical mania, in October, 1896, had already engaged rooms for her in a Baltimore asylum, but, at the suggestion of Dr. N. S. Lincoln, I was called. In a few weeks' time the patient made rapid improvement, gradually recovered, and is now in blooming health.

A patient brought to me from Virginia in February last had many mental and other symptoms that greatly alarmed her friends. After a month they disappeared entirely.

A German woman, with suicidal impulse, who consulted me about the same time, suffered from the notion that she was insane. Derivative followed by tonic medication, soon brought about her normal condition.

A young woman sent to me from Boston by Dr. Robert Edes, suffered from mild melancholia with the delusion of frequent attacks of appendicitis. After somewhat prolonged treatment she made good recovery.

I might also swell this list with many other cases of mild melancholia in young women, several of mymphomania, and one of sexual perversion, which took the form of tribadism. I have already reported the last-mentioned case elsewhere.

Among the nervous diseases in which we have the chance to distinguish ourselves in a diagnostic rather than a therapeutic way, are the *sensory neuron degenerations resulting in the "scleroses,"* which are taught to be of almost hopeless prognosis. But with the more modern pathological views of locomotor ataxy now looked upon as a periphero-central degeneration of sensory neuron endings, many cases of beginning tabes if diagnosticated early are susceptible of great improvement. So far as concerns comfort and usefulness, the following cases were cured :

In 1894, a prominent political man was referred to me by the late Dr. Seguin, of New York, who had diagnosticated a local lesion in the vertebral canal. After long continued treatment, which it is not necessary to detail, the patient made a good recovery, and is now one of the active men of his party in Congress.

Another congressman, the former chairman of the District Committee, was turned over to me by Drs. Muncaster and Prentiss. I found the patient debilitated, and with the usual sensory and motor symptoms of tabic disease, with the exception of iridoplegia or the Argyle Robertson pupil. I immediately ordered the patient to Atlantic City, where he carried out my directions faithfully for two months, and later returned to his home in the West, whence he wrote me some months afterward that all the symptoms had disappeared, and that his health was as good as it ever was.

In October, 1896, Dr. Clifton Mayfield brought to my office a middle-aged man, a lawyer, who had ataxia of gait and station, lightning pains and other tabic symptoms. I occasionally meet this patient in the street, and he tells me that the symptoms have so far disappeared that he considers himself practically well.

Three Washington physicians, whom I have treated for the same affection, have not fared so well, although in two of them the symptoms are so far arrested as not to interfere with daily work.

As *tabes is often mistaken for rheumatism*, on the other hand, neurasthenic conditions are sometimes diagnosticated as something else by persons not skilled in neurology. For instance, a young man studying for the priesthood at the Catholic University some two years ago, consulted me for what he was told was progressive muscular atrophy, a disease that would cut short his career. Examination enabled me to assure him to the contrary, and laying out a regimen which was strictly followed, this patient made a good recovery, and is now actvely engaged as a Paulist in propagating the faith.

A patient sent to me by Dr. Charles K. Mills, of Philadelphia, had been a great athlete, but had *neurasthenia* of such a type along with muscular wasting, that I at one time suspected progressive atrophy. After long continued treatment and sea bathing he entirely recovered.

Many additions to cases already cited would prolong this paper unnecessarily if the details of such as those of alcoholism, morbid fear, and of impotence were entered into.

I cannot close, however, without some reference to the *neurosis of the space-sense nerve, in which normal bodily equilibrium and its external relations* are shown by disturbed consciousness and the person himself or external objects appear to move. Most of the cases that I have treated were owing either to arterio-sclerosis or to a neurasthenic or lithemic element. In the case of the late Walt. Whitman, the poet, who was a patient of mine at the outset of his illness, the disturbance was owing to the first-named pathological condition. Perhaps senile change was also present in two cases that have lately come under observation. In one, the patient had been taking quinia. This I replaced by means directed to reduce cerebral congestion and to build up the general health. The result was good. In the other case, the treatment was substantially the same, with a like result.

Two other cases of an opposite character in young men, in which the symptoms were mainly subjective, have been of great interest to me. The first case was one of long standing in an army medical officer, who had become much run down from serving at malarious stations in the South. Disordered hepatic function, with cerebral and other symptoms, did not yield to treatment, and it was not until the patient took a trip across the Atlantic, when he suffered much from sea-sickness, that he entirely recovered.

In the second case, only lately dismissed from treatment, there was disordered central representation of the eighth cranial nerve with nausea and sudden weakness of the legs. The patient, lately a soldier, but now a waiter in a restaurant, was anæmic, a moderate, but constant drinker, smoked much, and committed other excesses that accounted for his condition, which was relieved by symptomatic remedies and regulation of the general health.

Practical deductions from such cases as the foregoing concern chiefly the questions of early diagnosis and of discrimination between home treatment and that of the asylum. I trust I shall not be accused of unkind criticism on

calling attention to the fact that so many practitioners, who pay no attention to special subjects, continue to grope in the dark concerning neurological cases, but do not hesitate to send patients to oculists, gynecologists, or other specialists, and even to the asylum.

Although no blame should be attached to the unfortunate subject of treatment in hospitals for the insane, yet public opinion places a lifetime stigma upon such cases that even affects criminal responsibility and civil capacity, and the mistrust also prevents these unfortunate from obtaining employment. It is, therefore, the manifest duty of those interested in civic welfare as well as in medicine to promote the methods of differentiation that competence and skill bring to bear in studying the decay of the nerve elements. My experience in common with most neurologists is that such diseases as those herewith mentioned are not recognized as early as they can and should be. Questions of forensic medicine concerning diseases of this class are merely matters of diagnosis. If we wish to advance the relevancy of medicine and justice in perplexing circumstances, or if we hope to arrest or cure such dismal or discouraging cases as those in evidence, we should never regret the attention and care expended in making an early diagnosis, and the consequent discrimination that this implies.

MEDICAL JURISPRUDENCE OF INSANITY*.

By EDWARD C. MANN, M. D., F. S. S., New York, N. Y.

Physician in Chief to *Sunny Side* Private Hospital for Mental and Nervous Diseases; Author of "*A Manual of Psychological Medicine*," etc.

GENERAL CONSIDERATIONS.

The chief practical issues coming within the range of this volume, which are to be decided by medical witnesses, are:

1. Questions of mental soundness or insanity, as affecting questions of responsibility in criminal cases; and

2. The capacity to make a will or to manage one's affairs.

Our object in this work is to present, as concisely as possible, the *application of mental medicine to the purposes of the law.* The numerous cases of real or alleged insanity depend, for their final settlement, mainly, if not exclusively, upon medical testimony.

The rôle of the physician is to point out to the judge and jury that which is disease and that which is not. The whole study of medical jurisprudence is of the greatest practical value both to the lawyer and the physician.

If, in cases determining the validity of a will, or the responsibility of a homicide, the judge and jury were not enlightened by medical testimony, so that law might keep pace with medicine, monstrous wrongs and flagrant injustice would be inflicted in almost every case.

The medical expert, to have his opinions of value, should be a man who has mastered the complex and subtle study of the mental and psychological functions; he should be a man who thoroughly studies each case that is presented to him by the lawyer; he should, to be of value in any given case, be a man who, on the witness stand, maintains a calm and dignified composure as a witness, and one who cannot be betrayed into heated rejoinders to counsel, and who does not allow his temper to become ruffled. A medical expert should be summoned on the supposition that he is master of the science of legal medicine. If he is, he will, in his testimony, be neither evasive nor ambiguous, and he will avoid, as far as possible, the use of all technical words or phrases; neither the court, counsel nor the jury can possibly understand technical and scientific language, such as would be appropriate in an address before a medical society. Affectation and pedantry are out of place on the witness stand.

The testimony of experts is necessary for the purpose of arriving at truth in certain medico-legal investigations. Such testimony, viz., that of skilled witnesses, is essential to a due observation and appreciation of facts. Such testimony can only deserve its name and fulfill its function when the witness is really skilled, *i. e.*, when he possesses those qualities of mind, that education of habits, and those stores of information, which alone can make him a competent observer. It is because medical witnesses have often been unskillful in the particular directions in which their evidence has been taken, that so much discrepancy has occurred in their statements. Scientific testimony does not fail in the matter of facts, because it is too minute, too cautious or too true, but rather because it is *wanting* in carefulness, precision and minuteness.

The physician's province is to point out the distinction between permissible variations within the range of health, and those departures from the common order of life, which are inconsistent with the idea of mental health.

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*From advance sheets of the second edition of the work on this subject, by permission of author, to be published about July, 1898.

To a physician skilled in psychiatry, nothing appears more absurd, and nothing could possibly be more in *conflict with the laws which govern mental disease, than the New York code*, which lays down, that if a man knew the consequences of his conduct, and the difference between right and wrong, he must be held legally responsible for crime; yet it happens very often that the insane are well informed upon these points, and that sane men are not. The sense of a difference between right and wrong, in the general or the abstract, is one of the characteristics of human mental constitution. It may differ in in intensity, in keenness, and in force of influence upon conduct. It, however, exists as an essential part of our nature, and in some form or another is present in the most degraded of our species. The application, however, of this sense to particular acts is as variable as are the conditions of human life, and is the product of all kinds of influences—the climatic, hereditary, educational and social. If the sense of right and wrong be destroyed, the individual is less than man; if the sense exists, but its application be erroneous, the individual may be insane, but he may be simply ignorant or prejudiced. It is a part of our nature to recognize the distinction in the abstract; it is not a part of our nature to determine its particular applications. I have repeatedly seen the insane, not only with a very keen conscience, but actually unhappy with the sense of their responsibility, while sane men are often met with who are not troubled in either of these particulars. The sense is not necessarily absent in the lunatic; its presence is not a proof of sanity.

The greatest question in criminal trials is, whether a man was capable of avoiding the compulsion of disease to crime? Could he help it? Lord Chief Justice Cockburn, of England, and Sir James Fitzjames Stephens, in his "Criminal Law," have taken the broad and liberal ground that where there is loss of self-control, caused by insanity, there is irresponsibility. In Stephens' "Criminal Law," 1893, Vol. II, page 130, we find the following, viz.: "Sanity exists when the brain and the nervous system are in such a condition that the mental functions of feeling and knowing, emotion and willing, can be performed in their regular and usual manner. *Insanity means* a state in which one or more of the above-named functions is performed in an abnormal manner, or not performed at all, by reason of some disease of the brain or nervous system." This is the most liberal definition that ever emanated from the bench, and such a liberal and progressive spirit is very gratifying to see.

Another very important point, and one which Justice Stephens evidently understands, is this: *Morbid states of the emotions derange the mind*, and we not unfrequently see the emotional or affective power of the mind markedly affected while the reasoning powers remain unaffected. There is to day a decided tendency, on the part of the progressive men of the legal profession, to alter the existing laws, to keep pace with increasing knowledge, while, we regret to say, there is another class of men who have so much professional conservatism that they oppose the law of insanity being brought into reasonable agreement with the knowledge of insanity possessed by physicians.

A strict enforcement of the law will hang many innocent persons.

The more progressive judges all recognize, and from their experience on the bench *know*, that *there are forms of mental disease* in which, though the patient is quite aware that he is about to do wrong, the will becomes overpowered by the force of the impulse of the mental disease. This is true of very many of the suicidal cases.

A lady whom I saw in consultation a few years ago, who was a case of suicidal melancholia, told me that she "knew it was wrong to attempt self-destruction; knew that she should be punished hereafter; that the thought of it made her very unhappy, as she realized her responsibility; but she couldn't help the feelings which impelled her to take her own life, or the impulse to do it." Although we cautioned the friends to keep a trained nurse with this patient, and impressed the fact of the insanity of the patient upon the mind of the friends, she eluded their vigilance finally, and took her own life. In such a case, will any lawyer deny that the power of self-control was destroyed by mental disease, and that this was an essential element in the question of responsibility? Suppose homicide instead of suicide had been the result of the mental disease, would that have altered the fact of the loss of the power of self-control being an essential element in the question of responsibility?

If, when the law speaks of a person laboring under such a defect of reason as not to know the nature and quality of the act he was doing, etc., it means for us to understand *a calm judgment of the circumstances and consequences of the act;* then the judges should so construe it in their charge to the jury in every criminal case where insanity is alleged by the defense, and counsel for the defense should always request that the judge should so construe the proposition.

If in any case where emotional insanity proper, or reasoning mania, is the type of mental disease which forms the defense, and the district attorney or the judge, in his charge to the jury, take the ground that the effect of insanity, if any, upon the emotions and the will is not to be taken into the account in deciding whether an act done by an insane man did or did not amount to an offense, the counsel for the defense should take the ground that the proposition that the effect of disease upon the emotions and the will can never, under any circumstances, affect the criminality of the acts of persons so afflicted, is false to every medical truth, and is bad law.

Any law is insufficient and bad which lays down propositions diametrically opposed to science or to medical books of recognized authority. The law of America should be, as Sir James Fitzjames Stephens has proposed for England, that *no act is a crime if the person who does it is, at the time when it is done, prevented, either by defective mental power or by any disease affecting his mind, from controlling his own conduct, unless the absence of the power of control has been produced by his own default;* or, as Dr. Bucknill, of England, has suggested as a simplification of Sir James Stephens' bill, "No act is a crime if the person who does it is, at the time, incapable of not doing it by reason of idiocy or of disease affecting his mind." This is a very needful amendment to our law relating to insanity, and should be in operation in every State of the Union. It is the law, practically, in Pennsylvania. From my experience in medico-legal trials, I consider that there is a pressing need, in cases where the insane prisoner has no friends and no means, for an amendment to our Code, which should place rich and poor on the same footing, by providing for an official examination, by mental experts of high standing, into the prisoner's mental condition before the trial. If good examiners were appointed, much good would accrue; if incompetent men, the gain to legal medicine would be very problematical. There would be nothing to prevent counsel from calling in the aid of any other experts that they wished, on any given trial; and it would give the friendless insane the services of skilled physicians, who would be remunerated by the county for their services in each case.

We have seen the necessity for expert or scientific evidence. We have also seen that medical testimony may fail of its legitimate effect sometimes if it is incomplete and inaccurate; or, on the other hand, if it is complete, accurate and definite, it may pass beyond the established lines of legal precedent. Our judges are generally men of great attainments, keen appreciation, and wonderful habitual fairness. Both judge and jury must often, we should think, be bewildered by the burden of deciding between experts. Their duty, when called upon to weigh expert opinions, is not an enviable one, and they are placed in a very delicate position.

The province of the medical expert in any given case is to represent to the counsel engaging him the true scientific value of the fact the latter has to deal with. If a medical man be true in his allegiance to science and to his profession, he will never stultify himself in court, and his opinions will soon be regarded alike by court, jury and counsel, as reliable and valuable, as he voices science instead of appearing as a mere partisan witness.

Honest, unbiased, scientific testimony of an expert, who is assumed to be a scientific man in his chosen specialty, is conducive at once to the good of the individual, the honor of our profession, and the cause of truth.

We would insist upon the importance of the study of medical jurisprudence being pursued by both legal students in the law schools, and by medical students in the medical colleges, under competent professors.

Medically, insanity is a disease of the body, affecting the mind by deranging its faculties and causing such suspension or impairment of the healthy intellect, the emotions, or the will, as to render an individual irresponsible.

It might also be defined as a diseased state of mind, due to ill health, accompanied by more or less absence of self-control, and impairment, in a marked degree, of the intellect, the emotions, or the will; and showing itself physically by depression, exaltation, or mental weakness, and by disorders of sensation, perception, or conception. We regard the latter as the better medico-legal definition of the two.

When a criminal case is presented to the lawyer, if mental disease be suspected, a physician is consulted to examine the prisoner, give his opinion to the counsel, and if favorable to the latter's view of the case, to testify as to the prisoner's irresponsibility. These expert witnesses should form their judgments with the greatest care, and then express themselves in the plainest terms. We cannot over-estimate the importance of having clear ideas, and of expressing them clearly; if the expert witness does this, he will be successful. Want of accuracy of thought, and of distinctness of expression, mars many an experts opinions given in court. It should be the duty of the expert to

examine the prisoner sufficiently often to thoroughly satisfy himself as to the existence of mental disease. The case for the defense may be considered especially strong when the insanity of the prisoner can be proved to be hereditary, when there have been previous attacks, or when epilepsy is present. In the case of the People *v.* Nelly Vanderhoof, the defendant was charged with killing her newly-born babe. Careful examination into the circumstances of the case revealed the fact that the prisoner had suffered from epilepsy from birth; that the family were saturated with the disease. Nelly Vanderhoof was a young unmarried woman, suffering from the strong moral shock of seduction and desertion, and the irritable condition of the nervous system produced by epilepsy; she also had, when we first saw her, a considerable degree of uterine derangement. When the writer examined her at the Tombs, she had apparently no realizing sense of the enormity of her crime, and the mental tone had become very obviously impaired as the result of epilepsy. After investigating her mental condition, we reported to her counsel that she was, in our opinion, irresponsible, and that epilepsy was the phase of mental disturbance that prompted the criminal act. During her past life, she had been many times under the dominion of that blind fury, so frequently exhibited by epileptics immediately before or after a fit. Her mind was generally so impaired that she was seemingly incapable of controlling the feeblest impulses of passion; she was laboring under a disease which almost invariably impairs the mind; she had a sister demented, as a result of the same disease, a resident of one of the New York institutions for the insane; her father was a case of dipsomania; her mother had twice attempted suicide; such was the prisoner's mental condition and her family history. The trial took place before Judge Van Brunt, in the New York Oyer and Terminer, April 9th and 10th, 1885. The People were represented by Assistant District Attorney Fellows, who, in trying this case, deserved great credit for his enlightened and humane views respecting the exculpatory effects of this disease. The prisoner was acquitted, the jury rendering a verdict of "not guilty," on the ground of insanity. Jude Van Brunt delivered a very fair, impartial charge, acknowledging the exculpatory effects of epilepsy.

The Maryland Colony for Epileptics,

According to some newspaper clippings, seems to be an assured success. We hope to hear of such homes in all of the States.

Analyses, Selections, etc.

Treatment of Coryza.

Dr. H. B. Whitney says (*N. Y. Med. News*) the following is the most useful of all prescriptions, giving great temporary relief during the first two or three weeks of coryza:

℞ Cocain hydrochlorate..... gr. iiss.
Menthol .... gr. iv.
Boracic acid..... ℥ij.
Powdered coffee [toasted]..... gr. viij.
M. Make powder.
S: Use a pinch [as snuff] in each nostril every three or four hours.

This snuff is also beneficial after there is an abundant catarrhal secretion. This treatment may be advantageously *combined with* the internal use of *gelsemium*, or later, with *atropin*.

The *New Orleans Medical and Surgical Journal* (March, 1898,) properly adds that a serious objection to such snuffs, when indiscriminately prescribed, is the danger of leading to the cocain habit.

Pre-Antitoxin Mortality of 40 per cent. Reduced to 3 6 per cent.

Prior to the introduction of anti-diphtheritic serum, the mortality from diphtheria at the Harper Hospital, Detroit, averaged for a number of years 40 per cent. According to the 34th annual report of the hospital authorities, (*Harper Hosp. Bul.*, Feb. 1898, page 73,) 141 cases were treated at the hospital during 1897, with the following results:

	Cases.	*Deaths.*
Ordinary diphtheria.....	115	1
Laryngeal diphtheria.....	26	6
	141	7
Excluding two cases moribund on admission.....	2	2
	139	5
Mortality under antitoxin treatment		3.6 per cent.

The antitoxin employed in Harper Hospital during 1897 was the anti-diphtheritic serum of Parke, Davis & Co.'s Biological Department, and the remarkable reduction displayed in the death-rate reflects the highest credit on the efficacy of this matchless product.

Fissure of Anus.

According to *Medical Record*, Cheron says that fissure of the anus may be cured by thoroughly cocaining and applying pure ichthyol for several days.

Book Notices.

Treatise on Diseases of Women. By ALEXANDER J. C. SKENE, M. D., L.L. D., Professor of Gynecology in Long Island College Hospital, Brooklyn, N. Y., and Gynecologist to the Hospital, etc. *Third Edition. Revised and Enlarged. With 290 Engravings, and 4 Plates in Colors.* New York: D. Appleton & Co. 1898. Large 8vo. Pp. 991-xviii. Cloth. Sold by subscription.

Beside many changes of text to bring this work fully up to date, we find this edition has about 25 more pages than the second—published six years ago. The eminence of the author as a *practical* worker and teacher gives to his every publication a special value. So that the presentation of this edition is but an assurance that what is contained in the volume under notice represents the best of the latest recommendations and practices. Some things of recent introduction in therapeutics, however, receive no consideration. For instance, for cancerous growths, the author does not refer to the treatment by mixed toxins—so highly commended by Dr. Wm. B. Coley. While some deny their efficacy, others speak so favorably of them that the decision of the matter is still *sub judice.* Dr. Skene continues to advocate chalk and arsenic in inoperable cases of cancer—believing they are the best of the remedies yet brought to light. It seems to us unfortunate that some every-day terms are omitted from both the table of contents and from the index. For instance, the term "uterine polypus" is so general that we felt disappointed in not finding the words mentioned in either place. And yet polypi are among the commonest things that the practitioner has to treat. We might also express surprise that the word "pedicle" does not occur in either place. The book is written "for the use of students and practitioners;" and the common names of subjects referred to in the text should be mentioned so that the student or practitioner can easily refer to them. But in detail of operation, clearness of diagnosis, ample illustration of cases, etc., and, in fact, in all round value, no work exceeds the worth of the one under notice. The author's method of controlling hemorrhage by compression and electric heat has been so perfected that he now rarely, if ever, uses the ligature. The description of such an invaluable procedure is, in itself, most important.

Editorial.

Retrospective and Prospective.

The *Virginia Medical Monthly* was conducted for twenty-two consecutive years under one management, and this issue completes the second year of the *Virginia Medical Semi-Monthly* under the same editorial control—thus giving us twenty-four years of connected journalistic experience. How many medical journals—good, bad, and indifferent—have been begun, continued and ended within these years, it would be difficult now to compute. Each annual volume of these successive journals has had a corps of contributors whose writing would grace the pages of the most pretentious periodical. We refer to the *Index of Contributors* to the current volume, bound with this issue, which names the titles of their papers, in proof of the authoritative prominence of the writers, and the general practical character of their contributions.

We have recognized the changed financial condition of the profession; and in sympathy with those whose incomes from faithful services rendered in various communities of the South have been painfully small, while we have, in reality, much increased the amount of reading matter, we now go further, and hereafter will reduce the price of the journal from three to *two dollars a year*, or *one dollar for six months*, when the amount named is remitted with the order.

The line of advertisements which this journal carries represent almost entirely the best houses and institutions of the country. While in times past we have been imposed upon by "fake concerns," we have been fortunate enough, as a rule, to discover the impositions in time to save our subscription patrons from being duped by them. We will try to keep the same rigid rules of selection and rejection of advertisements as have been adopted in recent years.

Now we are about to begin our Twenty-fifth annual editorial experience; and we trust that patrons will find that there is plenty of "life in the old land yet." Younger life is being drilled into experience, and we hope that its infusion into this journal is already being recognized.

We have ventured to impose ourselves thus much upon the space belonging to subscribers in the hope that the announcements made will be of interest to them, as to ourselves; and that this writing may secure from them a continuance of that kindly consideration which has ever

kept up a sincere friendship between patron and editor.

Best Means of Administering Salicylates.

It would be a work of supererogation to undertake to prove the great and permanent value of the salicylates in the treatment of rheumatism in its various forms. For over twenty-five years, salicylic acid and its salts have been recognized as standing at the very head of remedies in this class of diseases. There are, however, many grave drawbacks to the use of either the acid or any of its salts alone in a treatment which may last, as in rheumatism, gout, and neuralgia, for a long period of time. Being a powerful antiferment, and sharing this property with most of its salts, salicylic acid impairs digestion, and soon sets up a dyspeptic condition almost as intolerable as the pains which it is intended to overcome. Its aftertaste can be covered and concealed in no manner yet discovered, so that very soon the patient takes it only with great difficulty. In tongaline, however, the salicylates are so combined with corrigents that there is little or no reactionary rebellion against them by the organs of digestion and assimilation while their efficacy is not affected in the least. The experience of thousands of physicians corroborates this statement, and concurs in the fact that tongaline affords the very best method of administering the salicylates.

National and State Society Meetings During April.

Medical Association of the State of Alabama, at Birmingham, April 19. Dr. Luther L. Hill, Montgomery, Ala, *President;* Dr. James B. Jordan, Montgomery, Ala., *Secretary.*

Medical Society of the State of California, at Fresno, April 19. Dr. Cephas L. Bard, Ventura, Cal., *President;* Dr. Wm. Fitch Cheney, 906 Polk St., San Francisco, Cal., *Secretary.*

Medical Association, District of Columbia, at Washington, April 5 (semi-annual meeting). Dr. G. Wythe Cook, Washington, D. C., *President;* Dr. J. R. Wellington, 1335 N. St., N. W., Washington, D. C., *Secretary.*

Florida Medical Association, at Miami, in April (but date not stated). Dr. R. B. Burroughs, Jacksonville, Fla., *President;* Dr. J. D. Fernandez, Jacksonville, Fla., *Secretary.*

Medical Association of Georgia, at Cumberland Island, April 20. Dr. J. B. Morgan, Augusta, Ga., *President;* Dr. R. H. Taylor, Griffin, Ga., *Secretary.*

Mississippi State Medical Association, at Jackson, April 20. Dr. Wm. M. Paine, Aberdeen, Miss., *President;* Dr. J. R. Tackett, Biloxi, Miss., *Secretary.*

Tennessee State Medical Society, at Jackson, April 14. Dr. D. K. Powell, Dancyville, *President;* Dr. W. D. Haggard, Jr., Nashville, *Secretary.*

Texas State Medical Society, at Houston, April 26. Dr. Bacon Saunders, Fort Worth, Tex., *President;* Dr. H. A. West, Galveston, Tex., *Secretary.*

Tri-State Medical Society, at Dubuque, Iowa, April 5. Dr. Emory Lamphear, St. Louis, Mo., *President;* Dr. J. W. Fowler, Dubuque, Iowa, *Secretary.*

Western Ophthalmological, Otological, Laryngological and Rhinological Association, at Chicago, April 7. Dr. B. F. Fryer, Kansas City, Mo., *President;* Dr. F. M. Rumbold, St. Louis, Mo., *Secretary*

Announcements of several State Societies do not indicate times of meeting. Thus:

Kansas Medical Society, at Topeka.

Louisiana State Medical Society.

Medical and Chirurgical Faculty of *Maryland*, at Baltimore.

South Carolina Medical Association, at Lithia Springs

Professor of Diseases of Eye, Ear and Throat, Medical College of Virginia, to be Elected.

From the *Medical Register*, we learn that the chair of Diseases of the Eye, Ear and Throat in the Medical College of Virginia, made vacant by the death of Prof. Charles M. Shields, will be filled during the annual meeting of the Board of Visitors of the College April 21. Applications, accompanied by credentials, should be forwarded to the Dean, Dr. Christopher Tompkins, Richmond, Va.

The North Carolina Medical Journal

Has removed its editorial and publication offices from Wilmington *to Winston, N. C.* All communications and exchanges should be addressed accordingly. Of course, exchanges intended for associate editors should be sent as heretofore to their respective post-offices. As the ably edited official journal of the North Carolina Medical Society, we wish it great success wherever it may locate.

Dr. Hunter McGuire.

We were glad to learn that Dr. McGuire's health has so far recovered as to permit him to take charge of his surgical clinic on March 19th in the University College of Medicine.

Medical College of Virginia.

In the annual appropriation bill of the recently adjourned General Assembly of Virginia, we notice an appropriation of four thousand dollars to this institution.

INDEX TO VOLUME II.

(APRIL, 1897--MARCH, 1898, inclusive.)

EXLANATIONS.—This Index is divided into two parts—First, **Index of Contributors,** which also gives the titles of articles, etc., and, secondly, **Index of Subjects.**

In the Index of Subjects, the alphabetically-arranged italicised lines call attention to titles which represent original articles in this Volume.

Notices of books, colleges, journals, deaths, personals, and proceedings of societies, etc., are indexed in the **Index of Subjects** under the respective words **Book Notices, Colleges, Journalistic, Obituaries, Personals,** and **Society and Board Proceedings, etc.**

INDEX OF CONTRIBUTORS AND TITLES OF THEIR ARTICLES.

Anderson, J. A., M. D., Danville, Va. Some Remarks upon Summer Diarrhœa of Children 408

Anderson, Warren E., M. D., Pensacola, Fla. National Quarantine—Protest Against the U. S. Marine Hospital Service Assuming Charge of Affairs in Yellow Fever Epidemics, etc..... 561

Aylett, W. R., M. D. (Orange, N. J.), Newport News, Va. Case of Tansy Poisoning, 71; Ciliated Cells—Their Importance, Especially in Respiratory Tubes..... 577

Baker, W. H., M. D., Lynchburg, Va. Some Characteristic Symptoms that Help in the Differential Diagnosis of Iritis..... 361

Baldwin, J. F., A. M., M. D., Columbus, Ohio. The Technique of Abdominal Hysterectomy..... 288

Beazley, W. S., M. D., Richmond, Va. Some of the Evils that Threaten the Medical Profession..... 72

Bishop, Francis B., M. D., Washington, D. C. Chorea—Its Etiology, Pathology and Treatment, 410; Neurasthenia..... 508

Bishop, Seth Scott, M. D., LL.D., Chicago, Ill. Relations and Treatment of Hay Fever and Coryza..... 463

Blackford, Charles Minor, M. D., Atlanta, Ga. The Malignant Factor in Tumors, 1; The Present Position and Needs of Pathology..... 343

Bodow, J. C., M. D., Roanoke, Va. The X-Rays as a Factor in Diagnosis..... 737

Bovee, J. Wesley, M. D., Washington, D. C. A Plea for Early Diagnosis of and Early Operation for Cancer of the Uterus..... 415

Brady, Elliott T., M. D., Chatham Hill, Va. Case of Rupture of Heart Valves..... 233

Burks, C. R., M. D., Sherwood, Va. Hospital Clinics vs. College Clinics..... 41

Burr, Charles W., M. D., Philadelphia, Pa. Tumor of the Cerebellum, with Necropsy..... 511

Cannaday, Charles G., M. D., Roanoke, Va. Lateral Anastomosis of the Ileum and Colon for Complete Obstruction Due to Tumor of the Cæcum..... 143

Carter, H. R., M. D., Mobile, Ala. U. S. Marine Hospital Service and Yellow Fever Epidemics..... 675

Carter, J. M. G., M. D., Sc. D., Ph. D., Chicago, Ill. Relation of the Liver to Disturbances of Digestion in Children..... 283

Chamberlin, Frank T., M. D., Washington, D. C. A Case of Nasal Cystoma..... 44

Claiborne, John Herbert, A. M., M. D., Petersburg, Va. Management of the Third Stage of Labor, 341; Pneumonia 569

Claiborne, Jr., John Herbert, M. D. New York, N. Y. Treatment of Phlyctenular Keratitis..... 386

Collings, S. P., M. D., Hot Springs, Ark. Syphilitic Formative Osteitis, with Report of Cases of Eburnation, 493

Corson, Eugene R., B. S., M. D., Savannah, Ga. Pneumonia Toxæmia vs. The Theory of Obstruction in Pneumonia..... 521

Coston, H. R., M. D., Fayetteville, Tenn. Forceps Delivery with the Os Externum Two Inches External to the Vulva..... 166

Crawford, Joel, M. D., Yale, Va. Remarks on So-called Typho-Malarial Fever, As It Occurs in the Counties of Dinwiddie, Greensville, Prince George, Sussex, Surry, and Southampton, Va..... 353

Cullen, C. R., M. D., Polegreen, Va. Adherent Placenta and Sepsis, 74; Opinions on Puerperal Septicæmia—Its Causes and Treatment..... 150

Cumming, Hugh S., M. D., Philadelphia, Pa. National Quarantine..... 658

Cuzner, A. T., M. D., Gilmore, Fla. Remarks on Consumption and Its Treatment..... 185

Davis, A. E., M. D., New York, N. Y. The Clinical Importance of Eye Symptoms in Arriving at a Diagnosis of Meningitis in Children..... 201

Deaver, John B., M. D., Philadelphia, Pa. The Comparative Merits of the Different Operations for Stone in the Bladder..... 167

DeGarmo, W. B., M. D., New York, N. Y. Two Hundred and Fifty Bassini Operations for Cure of Inguinal Hernia without Mortality. 180; Have we Found a "Radical Cure" for Inguinal Hernia?..... 447

Dunham, Kennon, M. D., Cincinnati, Ohio. The Hypodermic Syringe and its Use in Malaria..... 454

Dunn, John, M. A., M. D., Richmond, Va. Concerning Corneal Ulcers, with Especial Reference to Their Treatment, 292; Two Additional Cases of Coloboma of the Lens, 389; Concerning the Inferior Turbinate, with Reference to the Treatment of Its Puffy Conditions, Especially the So-called Anterior Turbinate Hypertrophies..... 549

Earle, Jr., S. T., M. D., Baltimore, Md. A Substitute for Whitehead's Operation for Hæmorrhoids..... 381

Eggleston, J. D., M. D., Hampden Sidney, Va. Reflex Hemiplegia..... 742

Eliot, Johnson, M. D., Washington, D. C. Post-Nasal Adenoids 608
Eliot, Llewellyn, M. D., Washington, D. C. Can the Dispensary Abuse be Corrected? 514
Ellis, James N., M. D., Vienna, Austria. Prof. Robert Koch's Latest Discoveries—His "New Tuberculin"—Its Preparation and Effects—Its Ameliorating Power in Tuberculosis—Possibly it is Curative in Early Stages of the Disease 47
Fabricius, F. W., M. D., New York, N. Y. Tonsillitis—Tic Douloureux, with Reference to Clinical Treatment 360
Flint, Austin, M. D., New York, N. Y. Stercorin and Cholesteremia 144
Fullerton, Anna M., M. D., Philadelphia, Pa. Studies in Gynæcology from the Service of the Woman's Hospital of Philadelphia 197
Gallant, A. Ernest, M. D., New York, N. Y. Van Arsdale's Triangular Splint in 33 Cases of Fracture of the Shaft of the Femur in Infants and Children under Six Years. A Resumé of the Difficulties and Complications Overcome 260
Garrison, Harriet E., M. D., Dixon, Ill. Belladonna Treatment of Pertussis 199
Gaston, J. McFadden, M. D., Atlanta, Ga. Surgical Treatment of Suppurative Pericarditis, 99; Surgery of the Gall-Bladder and Duets 501
Glasgow, Robert, M. D., Lexington, Va. Management of the Third Stage of Labor 309
Goldspohn, A., M. D., Chicago, Ill. The Preparation of Catgut by Formalin and Boiling 523
Gordon, Wm. S., M. D., Richmond, Va. Heredity as a Causative Factor in Disease, 65; Causes and Treatment of the Nausea and Vomiting of Pregnancy 412
Graham, St. Joseph B., M. D., Savannah, Ga. Puerperal Infection 575
Hancock, Frank A., M. D., Pinner's Point, Va. Gastric Disturbances during Gestation 654
Harris, W. J., M. D. Blackstone, Va. Pneumonia or Pneumonitis—Which? Its Treatment by Alcohol 69
Harris, William L., M. D., Virginia Beach, Va. Some Remarks on Artificial Infant Feeding 486
Harrison, George Tucker, M. A., M. D., New York, N. Y. Rupture of the Uterus; Its Etiology, Diagnosis, and Therapeutics 697
Harrison, Virginius W., M. D., Richmond, Va. Suprapubic Cystotomy for Stone—Some Complications 282
Havard, Valery, M. D., New York, N. Y. Study of American Medicinal Flora 206
Hodgdon, Alex. L., M. D., Baltimore, Md. Epilepsy 391
Hodges, J. Allison, A. M., M. D., Richmond, Va. The Forgotten Doctor 327
Hoge, Jr., M. D., M. D., Richmond, Va. The Various Discharges of the Male Urethra, 6; Bromoform in Whooping Cough 103
Horner, Frederick, M. D., Marshal, Va. The American Naval Medical Service 667
Horseley, J. Shelton, M. D., New York, N. Y. Cocaine in Surgery 460
Howard, Hamilton P., M. D., Alexandria, Va. A Plea for Clean Surgery in Minor and Emergency Cases of the General Practitioner, with Some Practical Hints 420
Hughes, T. S., M. D., Cohutta, Ga. How to Elevate the Profession in the Country 578
Humiston, W. H., M. D., Cleveland, Ohio. Cocaine Anæsthesia in Perineorrhaphy 445
Hunt, Presley C., M. D., Washington, D. C. The Therapy of Phthisis 13
Hutchins, M. B., M. D., Atlanta, Ga. Various Treatments of Epithelioma 478
Irving, Paulus A., M. D, Richmond, Va. Placenta Prævia 373
Johnson, Joseph Taber, M. D., Washington, D. C. Ninety Cases of Hysterectomy, with Remarks on Method and Technique 379
Johnston, Geo. Ben., M. D., LL.D., Richmond, Va. Value to the Public of State Medical Societies 349
Jones, H. E., M. D., Roanoke, Va. Normal Ectopic and Gestation (Tubal) Coincident 644
Jordan, Arthur, M. D., Richmond, Va. Psoriasis, with a Case in Illustration 365
Jordan, Edwards, and Levy, Richmond, Va. Report on the Progress of Serum-Therapy in General—in Virginia Especially 633
Keen, W. W., M. D., Philadelphia, Pa. Address on Surgery 146
Knight and Blanchard, Ashland, Va. The Absorption by Water of Free and Albuminoid Ammonia under Various Conditions 227
Kress, D. P., M. D., Battle Creek, Mich. Chronic Constipation, with Particular Reference to its Treatment 483
Lee, Elmer, A. M., M. D., Ph. B., New York, N. Y. The Influence of Drug Impressions—A Study in Medical Empiricism, 253; Influence of a Liberal Education with Reference to Medical Ethics 285
Levy, F. C., M. D., Richmond, Va. Laryngeal Diphtheria, Treated by Antitoxin and Calomel Fumigation, 141; Bacteriological Diagnosis 317
Liell, Edward Nicholas, M. D., Jacksonville, Fla. Separate Uterus and Vagina—A Report of Five Cases Met with in Practice and Consultation 611
Lynch, Junius F., M. D., Norfolk, Va. Vaginal Atresia—Report of Cases 7
Mack, Charles S., M. D., La Porte, Ind. Correspondence, 527
Maher, J. J. E., M. D., New York, N. Y. A Study of One Hundred Cases of Atresia and Stenosis-Vaginalis in Labor, with Thirteen Fatal Cases 176
Manley, Thomas B., M. D. New York, N. Y. A Brief Consideration of Some Unusual Types of Fractures and Dislocations of Bones Liable to be Overlooked 172
Mann, Edward C., M. D., F. S. S., New York, N. Y. Medical Jurisprudence of Insanity 745
Marcy, Henry O., A. M., M. D., LL.D., Boston, Mass. The Suturing of Wounds—The Advantages of the Absorbic Suture Buried in Aseptic Wounds 325
Martin, R. S., M. D., Stuart, Va. Synoptical Report of Fourteen Abdominal Operations for Diseases of Uterus, Ovaries, etc 546
Massey, G. Betton, M. D., Philadelphia, Pa. Neurasthenia and Abdominal Neurosis 182
Mays, Thomas J., A. M., M. D., Philadelphia, Pa. Increase of Insanity and Consumption Among the Negro Population of the South since the War 129
McGahan, Charles F., M. D., Aiken, S. C. The Sanitorium Treatment of Pulmonary Phthisis 450
McGuire, Edward, M. D., Richmond, Va. Post-Operative Intestinal Paresis from Nerve Injury 429
McGuire, Hunter, M. D., LL.D., Richmond, Va. Stone in the Bladder—A Clinical Lecture, 15; Remarks on Appendicitis, with Report of Twenty-six Cases Operated on During the past Twelve Months 33
McGuire, Stuart, M. D., Richmond, Va. Two Cases Illustrating the Value of the X-Ray as a Means of Diagnosis 710
McKimmie, O. A M., M. D., Washington, D. C. Hypertrophy of the Lingual Tonsil and its Treatment 257
McNabb, Charles P., M. D, Knoxville, Tenn. Life-Work of the Physician 10
Michaux, Jacob, M. D., Richmond, Va. Abscesses of Both Kidneys due to Chronic Cystitis, 101; Some Overlooked Points in Liver Troubles 104
Moran and Kerr, Washington, D. C. Cerebellar Tumor—Two Exploratory Operations—Tumor not Removed—Autopsy—Cyst and Fibro-Sarcomatous Tumor of the Left Lobe 234
Morgan, Edwin L., M. D., Washington, D. C. Case of Obstruction of the Bowel from Carcinoma—Remarks 479
Morgan, James D., M. D., Washington, D. C. Facial Manifestations of Diseases 547
Myers, Randolph M., M. D., Washington, D. C. Cramps as Affecting Strokers 552
Nash, Francis Smith, M. D., Washington, D. C. Reminiscences—Medical and Hygienic—of the Arctic 250

Nelson, A. J., M. D., Gaines' Mill, Va. Adherent Placenta and Sepsis 187
Old, Levi, B. A., M. D., Norfolk, Va. Inflammatory Diseases of the Hand 672
Palmer, Alfred C., M. D., Richmond, Va. Some Reflex Troubles Caused by Swollen Middle Turbinate Bodies 358
Parker, Wm. H., M. D., Richmond, Va. Pathology and Treatment of Internal Hæmorrhoids by Ligature, with Case 45
Parker, W. Thornton, M. D., Groveland, Mass. The Use of Normal (Horse) Blood Serum in the Treatment of Tuberculosis 234
Pearce, F. Savary, M. D., Philadelphia, Pa. The Role of Uric Acid in Certain Types of Neurasthenia and Allied States—an Expression of Disturbed Metabolism 162
Peyser, Mark W., M. D., Richmond, Va. Digestive Ferments 195
Piper, Jackson, M. D., Towson, Md. The Treatment of Pneumonia 646
Plimpton, Warren O., M. D., New York, N. Y. Phelps' Rapid Operation for Excision of the Knee and Its Indication 469
Potter, William Warren, M. D., Buffalo, N. Y. Reciprocity in Medical Licensure—A Plea for Interstate Indorsement 133
Preston, Ro. J., M. D., Marion, Va. Aphasia, with Report of a Case 97
Price, Joseph, M. D., Philadelphia, Pa. Mechanism and Treatment of Perineal Lacerations, 139; Lack of Interest in Plastic Surgery 437
Ravogli, A., M. D., Cincinnati, Ohio. Tuberculin in Dermatology 526
Richardson, Charles W., M. D., Washington, D. C. Diseases of the Antrum 553
Ristine, C. E., M. D., Knoxville, Tenn. Cancer of the Breast, and its Radical Cure 423
Robinson, William L., M. D., Danville, Va. Crude Notes of Some Abdominal Surgery 433
Rose, George H., M. D. Norfolk, Va. Transposition of All the Organs of the Body 297
Rosenthal, Edwin, M. D., Philadelphia, Pa. The Specific Use of Diphtheria-Antitoxin in Laryngeal Diphtheria, 194
Rosenwasser, M., M. D., Cleveland, Ohio. Treatment of Circumscribed Pelvic Hemorrhage 205
Rosse, Irving C., M. D., Washington, D. C. Brief Mention of Neurological Cases Successfully Treated 742
Schoolfield, C. B., M. D., Dayton, Ky. Ectopic Pregnancy Twice in Same Patient—Two Cases 643
Shands, A. R., M. D., Washington, D. C. Treatment of Flexion Deformities of the Knee-Joint 456
Shaw, John W., M. D., Washington, D. C. Thyroid Therapy in Connection with Some Diseases of Nutrition, 605
Sinkler and Pearce, Philadelphia, Pa. A Study in Epilepsy 537
Sohon, Frederic , M. D., Washington, D. C. Cigarettes—Effects Compared 612
Sothoron, Elmer, A. B., M. D., Washington, D. C. An Improved Traction Rod Forceps, 291; Hour-Glass Contraction of the Uterus 665
Stoakley, Wm. S., M. D., Millboro Springs, Va. Typho-Malarial Fever—What Is It? 104; Typho-Malarial Fever—A Misnomer, 202; What are Neuroses? 295
Stockton, Charles G., M. D., Buffalo, N. Y. Gastro-Intestinal and Hepatic Relations of Gout 204
Stone, J. S., M. D., Washington, D. C. Some Recent Abdominal Surgery, 68; The Influence of the Mind upon the Body 669
Stuart, John P., M. D., Attalla, Ala. A Bouquet of Remedial Agencies; or, Mental Impression as a Therapeutic Agent 556
Taylor, Hugh M., M. D., Richmond, Va. Diagnosis of Shock, 440; Surgery of Typhoid Fever, 516; Appendicitis: Its Differential Diagnosis 705
Thomas, John D., M. D., Washington, D. C. Some Suggestions as to the Clinical Laboratory of the Practicing Physician 355
Tompkins, E. L., M. D., Washington, D. C. Two Cases of Injury to the Spinal Cord 738
Tracy, Edward A., M. D., Boston, Mass. The Passing of Plaster, 174; Treatment of Colles' Fracture 186
Tyson, James, M. D., Philadelphia, Pa. Report of (I) a Case of Hypertrophic or Biliary Cirrhosis, with Comments on its Etiology; also (II) a Case of Persistent Crepitant Rale 405
Upshur, J. N., M. D., Richmond, Va. Fatty Liver, with Report of a Case 702
Van Marter, Jr., J. G., M. D., Savannah, Ga. Quinin Not a Specific in Malaria, Excluding the Simple Intermittents 601
Vincent, Thomas N., M. D., Washington, D. C. Lung Fever 729
von Ruck, Karl, B. S., M. D., Asheville, N. C. Chronic Pulmonary Tuberculosis—Its Clinical Course and Symptomatology 218, 245, 278
Walker, George S., M. D., Staunton, Va. Hæmatidrosis (Blood-Sweating) 102
Webster, David, M. D., New York, N. Y. Ophthalmic Clinical Notes 606
Whitaker, H. W., M. D., Columbus, Ohio. Chronically Diseased Tonsils 489
White, Joseph A., A. M., M. D., Richmond, Va. After-Treatment of Cataract, with Especial Reference to the Use of Germicides 225; Abscess of the Ear (so-called)—Its Importance, Dangers, etc., 333; Dental-Plate, with Central Incisor Attached, Impacted in Œsophagus Three Months, Removed *Per Vias Naturales* 703
Wilson, Albert Edwards, M. D., Norfolk, Va. Gonorrhœal Ophthalmia 651
Wood, Everett A., M. D., Sedalia, Mo. Paquin's Serum in Tuberculosis—Report of Cases 256
Woodward, John F., M. D., Norfolk, Va. Deafness—The Result of Circulatory and Pneumatic Irregularities Beginning in Neglect 230
Wootton, H. E., M. D., Kempner, Tex. Case of Complete Inversion of the Uterus Seven Hours After Labor 488
Zenner, Philip, A. M., M. D., Cincinnati, Ohio. Tobacco Neuroses 515

Index of Subjects.

(Initial Italics indicate subjects of Original Communications to the Virginia Medical Semi-Monthly, Volume II.)

Abdomen, Wound of..... 435
Abdominal Operations for Diseases of Uterus, Ovaries, etc 546
Abdominal Surgery, Crude Notes of. 433
Abdominal Surgery, Some Recent ... 68
Abdominal and vaginal section, 209; Technique of — hysterectomy, 288; Diagnosis of — lesions and shock, 444; Neurasthenia an — neurosis, 182; — palpation aids labor, 116; — pulse, 34; — sections in America, 716; Methods of section, 26; — surgeon should be obstetrician, 437; How to prepare ligatures for — surgery..... 85
Abortion, Uterus ruptured during. 688
Abscess of Ear, Importance of, etc... 333
Abscess, Appendicular, 434, 586; Treatment of — —, 36; Brain — after ear disease, 202; — of antrum, 553; — of hand or finger, 672, 673; — of kidney, 76; — of liver and cholelithiasis, 19; — of liver, see *Hepatic abscess;* Case of pelvic —, 433; Pulmonary —,..... 734
Abscesses after T. A. (Koch's) is important..... 49
Abscesses of Both Kidneys, Due to Chronic Cystitis..... 101
Absorbable sterilized catgut ligatures..... 525
Absorbic suturing of wounds..... 325
Absorption by Water of Free and Albuminoid Ammonia..... 227
A. C. E. anæsthetic mixture..... 621
Acetic acid to protect skin after caustic potash..... 479
Achalme, Bacillus of..... 718
Acholia..... 146
Acid, Acetic, see *Acetic acid;* Carbolic —, see *Carbolic acid;* Hydriodic —, see *Hydriodic acid;* Lactic —, see *Lactic acid;* Lithic , see *Uric acid;* Uric —, see *Uric acid.*
Aconite for tonsillitis 361
Acromio-clavicular dislocation..... 172
Adams-Alexander operation..... 68
Adenoids and tonsillitis, 491; nasal — cause deafness, 231; Postnasal —,.....608, 620
Adherent Placenta and Sepsis.....74, 187
Adhesions in abdominal sections.. 26
Adoration in disease..... 560
Æstivo-autumnal malaria 511, 601, 614
After-birth. See *Placenta.*
After-pains, Antipyrin for..... 623
Agglutination diagnostic test of yellow fever..... 724
Agitans, Paralysis. See *Paralysis agitans.*
Agraphia 742
Aid Society, Physicians' Mutual... 214
Aiken Sanatorium for tuberculosis 450
Alabama practice law..... 158
Alaska practice law, No, 158; Scurvy in —,..... 250
Albumin, Serum —, of malignancy 1
Albuminoid Ammonia, Water absorption of..... 227
Albuminuria, Guaiacol for, 120; Carbolic acid prevents scarlatinal —, ... 684
Alcohol for fever of phthisis, 14; — cause of hepatic cirrhosis, 208; — in pneumonia.....69, 735
Alcoholic liver and dyspeptic liver, 209; — injections for cancer 426
Alexander-Adams operation.....68, 115
Alum, Ammonia, for tonsillitis..... 492
Alumni of University of Virginia in service..... 667
Ambulances, Trolley-car..... 567
American Medical Flora, Study of... 206
American Naval Medical Service..... 667
American beer causing cramps, 552; — Pediatric Society antitoxin reports..... 633
Ammonia alum for tonsillitis, 492; water absorption of free and albuminoid — 227
Amyloid liver..... 284
Anæmia demonstrated..... 358
Anæsthesia improved, 621; cocaine — for perineorrhaphy, 445; Importance of —, 147; cocaine for local —, ... 460
Anæsthetic, Atrophine, 387; local —,..... 718
Anal fissure, Cocaine and ichthyol for, 91; Ichthyol for — —,..... 748
Anastomosis, Lateral, of Ileum and Colon for Obstruction due to Tumor of Cæcum..... 143
Anatomy of hand..... 672
Anchylosis. See *Ankylosis.*
Aneurism in Japan..... 687
Angier's petroleum emulsion 606
Aniline dyes in diabetic blood..... 579
Animals not subjects of cancer..... 423
Ankle sprain, treatment.....77, 78, 79
Ankylophobia 457
Ankylosis, Hot-air apparatus for.. 367
Anterior turbinate hypertrophies, 549
Anthrax and dogs, 237; — bacillus and carbolic acid..... 685
Anticholera inoculations..... 688
Antidiphtheritic serum, Improved 75
Antikamnia for influenza, 18; — for labor pains, 270; — for pain, 404; — in melancholy.... 229
Antiphthisin, 636; Kleb's — for tuberculosis..... 721
Antipneumotoxin not discovered. 528
Antipyrin and lactation, 623; — patent. 630
Antisepsis in surgery, Careful..... 421
Antiseptic pad after labor, 187; — after cataract operations, 224; — surgery..... 148
Antistreptococcic serum, 595; — — in puerperal septicæmia, 622; — — scarlatina, 636; — — of erysipelas, puerperal fever, septicæmia, etc..... 637, 641
Antitoxin, Diphtheria, 307, 320, 325; — — compulsory, 727; — and calomel fumigations for diphtheria, 141; — — curative, 466; status of — —, 336; — for sepsis, diphtheria, etc., 679, 680, 681, 682, 683; keep — in cool place, 684; — in diphtheria, 594; — in tetanus, 594, 622, 637, 641; — in yellow fever, 635; — treatment of diphtheria, 633, 639; Report on — treatment of laryngeal diphtheria, 82, 193; Tubercular —,..... 339
Antitubercle serum, 636, 680, 681; Paquin's — — 300, 450, 721
Antrum, Diseases of..... 553
Anuria, nearly complete, in infant 712
Anus, artificial, operation..... 69
Aphasia, with Report of Case. 97
Aphasia, 742; — in epilepsy..... 541
Apoplexy, Heat. See *Insolation.*
Appendicitis, Differential diagnosis.. 705
Appendicitis—Remarks on 26 Cases. 33
Appendicitis, 149; — caused by worm, 608; mistakes in — diagnosis, 482, 496; need for better diagnosis in —, 724; no pathognomonic symptoms usual in —, 585; — operations, 69; Ten cases of — 433

Appendix on left side..... 297
Arctic, Diseases of the, 251; Medical reminiscences of the — 250
Argentamin, Uses of..... 118
Arizona practice law, No..... 158
Arkansas practice law..... 158
Armamenterium, Emergency, Surgeon's..... 422
Arsenic for tuberculosis, 14; — in cigarette paper, 618; — injection for cancer 426
Arsenious acid for epithelioma..... 478
Arterio-sclerosis in neurosis..... 744
Arthrectomy 470
Arthritis, Hot-air apparatus for... 367
Arthritisme. See *Gouty.*
Artificial Infant Feeding..... 486
Artificial respiration, 116; — teeth in œsophagus removed.....703, 713
Ascites in fatty liver, 702, 712; — of alcohol cirrhosis..... 117
Ascitic fluid clinically..... 358
Asepsis in laparotomy, 716; Careful — in Surgery..... 421
Aseptolin, Edson's 658
Asphyxia, Heat, see *Insolation;* Treatment of fœtal — 312
Ataxia-abasia of brain disease, Hysterical 513
Asthma, Hay, see *Hay-fever;* — of adenoids 610
Asthmatic chest..... 407
Ataxia, Cerebellar, 513; — in cerebellar disease, 241; — of posterior sclerosis 513
Atresia and Stenosis vaginalis in Labor..... 176
Atresia of vagina, Cases..... 7
Atrophic cirrhosis of liver, 117; — tonsils..... 490
Atropine anæsthetic. 387
Auras of epilepsy in 315 cases..... 537
Auto-antitoxin for sepsis,..... 679
Autumnal, Æstivo, malarial fever 601, 614

Bacilli of Arctics are non-pathogenic, 250; — glycerin and watery extract for tuberculosis.. 721
Bacillus icteroides, Sanarelli's, 300, 595; Hansen's — lepræ, 597; — of achalme, 718; Sanarelli's yellow fever —, 635; Tubercle — 245
Back, Sprains of 78
Bacteriological Diagnosis..... 317
Bacteriology founded, 345; — in surgery, 148; — of rheumatism. 718
Badigeonnage..... 426
Bandaging after sprains..... 80
Baranoff Island, Springs in..... 251
Bassini Operations for Inguinal Hernia 180
Bassini hernia operation, Technique..... 448
Bed-sores rare in phthisis..... 280
Beechwood creosote in small doses 450
Beer, American, causing cramps... 552
Belladonna Treatment of Pertussis... 199
Benign growths resemble malignant 2
Benzoin in purulent tuberculosis.. 17
Beri-beri, 296; — epidemics, 593; — not cured by quinine..... 602
Biceps tendon, long, displaced..... 77
Bicycle accidents, 307; — for tuberculosis 17
Bile, Cholesterin in, 145; Surgery of — ducts, 501; Collection, functions, etc., of —, 501; — secreted mostly at night. 21, 25
Bile-stones (see *Gall-stone*)..... 503
Biliary calculus, see *Cholelithiasis;* Etiology of — cirrhosis, 405; — fistula of cholelithiasis..... 20
Bilious pleurisy, 570; — remittent fever 615
Biliousness and jaundice.....104, 106
Billroth's knee splints..... 458
Binder after labor, 343; Obstetric — 188
Biology, Importance of 345
Birth rates in United States, 116; Uterus ruptured during —..... 697
Bismuth for diarrhœa of phthisis. 14
Bladder, see *Cystotomy;* Gall —, see *Gall-bladder;* — inflamed, see *Cystitis;* Sign of tubercular — and urethra, 116; — contracted in prostatics, 271, 297; — irritation and turbinate swelling, 359; Stone in —, 15; Operations for stone in —..... 167
Bleeding. See *Venesection.*
Blindness by snow prevented 252
Blister, Uses of the..... 694
Blood clinically, 358; Diabetic — and aniline dyes, 579; normal — serum for tuberculosis, 234; Goat's — serum in diphtheria, etc., 404; — test of yellow fever, 724; — vomited by infant..... 585
Blood-letting (see *Phlebotomy*) in pneumonia.....529, 647
Blood-staining, Ehrlich's solution. 155
Blood-sweating, Case of... 102
Body, Influence of mind upon..... 669
Bone felon, Treatment of, 673; New — formed, 493; Seven inches of — reproduced, 471; X-Ray to find ball in —..... 737
Bones (see *Fracture*), Unusual fractures and dislocations..... 172
Books announced..... 192

Book Notices, etc.:

Abbott—Principles of Bacteriology.... 598
Agnew—Hemorrhoids and Other Non-Malignant Rectal Diseases..... 122
Allbutt—System of Medicine by Many Writers. Vol. II, 157; Vol. III, 436; Vols. I and III, 533; Vol. V..... 627
Anders—Text-Book of the Practice of Medicine..... 192, 466
Annual Report of the Supervising Surgeon-General of the Marine Hospital Service of the U. S., for the Fiscal Year 1897..... 123
Ball—Essentials of Bacteriology.. 535
Bangs—American Text-Book of Genito-Urinary and Skin Diseases..... 192
Bashore—Outlines of Rural Hygiene. 629
Beard & Rockwell Sexual Neurasthenia (Nervous Exhaustion) and Diet for the Nervous..... 725
Bishop—Diseases of the Ear, Nose and Throat, and Their Accessory Cavities 91
Boix—The Liver of Dyspeptics, and Particularly the Cirrhosis Produced by Auto-Intoxication of Gastro-Intestinal Origin..... 192
Braithwaite & Trevelyan—Retrospect of Practical Medicine and Surgery —a Semi-Yearly Journal..... 29
Brunton—Lectures on the Action of Medicine..... 564
Byford—Manual of Gynæcology..... 597
Coplin—Manual of Pathology..... 629
Crothers & Rice—Elements of Latin... 663
Currier—The Menopause..... 302
de Schweinitz—American Text-Book of Diseases of the Eye, Ear, Nose and Throat..... 192
Deutch's Letters..... 301
Dock—Text-Book of Materia Medica for Nurses..... 628
Ewald & Manges—The Diseases of the Stomach..... 92
Fick—Diseases of the Eye and Ophthalmoscopy..... 191
Foster—Reference Book of Practical Therapeutics..... 301
Garrigues—Text-Book of the Diseases of Women..... 499
Gould—American Year-Book of Medicine and Surgery 690
Gros—Modern Pathological and Therapeutic Study of Rheumatism, Gout, Rheumatoid, Arthritis and Allied Affections..... 690
Hale—Saw Palmetto..... 662
Hare—Text-Book of Practical Therapeutics, 191, 628; Practical Diagnosis 598
Hartelius—Swedish Movements, or Medical Gymnastics..... 534
Heister's Embryology..... 192
Hemmeter Diseases of the Stomach, 689
Hillsman—Notes on Principles of Surgery..... 662
Hinsdale—Syringomyelia..... 123
Hirst's Obstetrics..... 192
Hoge—Outlines of Histology..... 402
Holbrook—Stirpiculture: or the Improvement of Offspring Through Wiser Generation..... 662
Holt—Care and Feeding of Children.. 565
Hutchison & Rainy—Clinical Methods 565
Hyde & Montgomery—Practical Treatise on Diseases of the Skin..... 60
Holloway—Constipation in Adults and Children, with Special Reference to Habitual Constipation and Its Most Successful Treatment by Mechanical Methods 499
Index-Catalogue of the Library of the Surgeon-General's Office, U. S. Army 535
Jewett—Essentials of Obstetrics. 467
Johns Hopkins' Hospital Reports. Vol. VI..... 402
King—Manual of Obstetrics..... 628
Klemperer's Clinical Diagnosis.. 567
Lea Brothers & Co.—Year-Book of Treatment for 1897, 30; 1898..... 725
Lilienthal—Surgical Hints for the Surgeon and General Practitioner... 535
Lindsay & Blakiston—Physicians' Visiting List for 1898..... 566
Loomis & Thompson—A System of Practical Medicine..... 300, 663
Macdonald—Clinical Text-Book of Surgical Diagnosis and Treatment for Practitioners and Students of Surgery and Medicine..... 192, 597
Mack—Principles of Medicine 401
Magruder—Guide to Physical Diagnosis..... 302
Mallory & Wright's Pathological Technique.....192, 535
Martin—Lectures on the Treatment of Fibroid Tumors of the Uterus—Medical, Electrical and Surgical..... 93
Mattry—Young People's History of Virginia and Virginians..... 302
Mitchell—Clinical Lessons on Nervous Diseases 122
Moore—Orthopedic Surgery.....192, 691
Muthane—Leprosy, and the Charity of the Church..... 60
Nettleship—Diseases of the Eye..... 598
Paget—Ambroise Paré and His Times, 1510-1590..... 663
Park—Epitome of the History of Medicine..... 534
Penrose—Text-Book of Diseases of Women.....192, 627
Phelps—Traumatic Injuries of the Brain 498
Potter Hand-Book of Materia Medica, Pharmacy and Therapeutics.... 563
Powell—Fourteenth Annual Report of the Bureau of Ethnology to the Secretary of the Smithsonian Institution, 1892-3, 213; Fifteenth Report, 1893-4..... 535
Ranney—Eye-Strain in Health and Disease 213
Reed—American Academy of Railway Surgeons..... 535
Roberts—Clinical, Pathological, and Experimental Study of Fractures

of the Lower End of the Radius, with Displacement of the Carpal Fragment Toward the Flexor or Anterior Surface of the Wrist..... 121
Ruddiman—Incompatibilities in Prescriptions..... 500
Sajous—Annual of the Universal Medical Sciences and Analytical Index..... 401
Senn's Tuberculosis of the Genito-Urinary Organs, Male and Female, 192, 499
Shoemaker—Practical Treatise on Diseases of the Skin..... 564
Simon—Manual of Clinical Diagnosis by Means of Microscopic and Chemical Methods..... 662
Skene—Treatise on Diseases of Women..... 749
Solly—Handbook of Medical Climatology..... 212
Stedman—Twentieth Century Practice, Vol. IX, 92; Vol. XI, 400; Vol. XII, 498; Vol. XIII..... 691
Sutton & Giles' Diseases of Women, 192, 402
Taylor—Manual of Medical Jurisprudence..... 627
Thayer—Lectures on Malarial Fevers 467
Thompson—Diseases and Injuries of the Conjunctiva—Especially the So-called Granulated Lids..... 692
Tiffany—Sojourn among the Oculists of Europe..... 500
Transactions of the American Microscopical Society..... 690
Transactions of the Medical Society of the District of Columbia (March, 1896, to January, 1897)..... 691
Transactions of the Medical Society of Virginia..... 31
Warner's Pocket Medical Dictionary of To-day..... 123
Wetterstrand & Petersen—Hypnotism, and Its Application to Practical Medicine..... 29

Borborygmi with tenesmus locate obstruction..... 480
Botany, Medical..... 206
Bougard's caustic paste..... 425
Bowel (see *Intestine, Colon, Ileum, etc.*,) obstructed by cancer, 479, 495; Diagnostic sign of — cancer, 600; Causes of — obstruction, 21; — — by cæcal tumor, 143; Operation for typhoid — perforation, 497, 517; — — by inflammatory band..... 497
Brain (see *Cerebral*, also *Cerebellar*) centres, 97; Diagnosis of — contusion, 443; Diagnosis of — hæmorrhage, 442; Diagnosis of — injury and shock, 442; — abscess after ear disease, 202; — symptoms absent in typhoid fever..... 496
Breast (see *Mamma*), Cancer of— Its cure..... 423
Bromides for epilepsy, 545; — harmful, 394; How — act..... 146
Bromidia, 600; — in Italy..... 568
Bromoform for Whooping Cough..... 103
Bronchitis of pneumonia..... 734
Brunswick yellow fever epidemic. 677
Buffalo Lithia Water, Solvent action of..... 93
Bullet in bone, X-Ray to find..... 737
Bursæ swollen..... 76

Cæcum, Appendix occluded near, 587; Anastomosis for tumor of —, 143; Diagnosis of — impacted and appendicitis..... 710
Calculi (urinary) dissolved by Buffalo Lithia Water, 93; Diagnosis of gall — and appendicitis..... 708
Calculus (see *Stone*, also *Gall-stone*), Biliary (see *Cholelithiasis*), 503; Supra-pubic cystotomy for vesical — (see *Stone in bladder*)..... 282
Calenture. See *Insolation*.
California practice law..... 158
Calomel fumigations for laryngeal diphtheria..... 141
Cancer of Breast—Its Radical Cure. 423
Cancer of Uterus—Early Diagnosis and Operation for..... 415
Cancer (see *Carcinoma, Malignant*, Schirrus, *Epithelioma*, etc.), Origin of name, 1; — of liver due to gall-stone, 18, 21, 22; — due to eczema, 19; Histology of —, 59; — in child's mouth, 75; Diagnosis of — of liver, 117; Prescription for vomiting of gastric —, 179; — of liver and dyspeptic liver, 209; — of uterus, 379, 435; Diagnostic sign of — of bowel, 600; — treatment..... 679, 680
Capsicum, Hot infusion, for hiccough..... 196
Carabana Water..... 215
Carbolic acid for scarlatina..... 684
Carcinoma (see *Cancer*), 347; Histology of, 4; Early recognition of — uteri, 86; Histological differentiation between — and sarcoma, 59; — of breast, 424; — obstructing bowel, 479, 495; serum therapy of —..... 637
Caries, Spinal, Early Diagnosis of, 113
Castration for enlarged prostate... 119
Cataract, After Treatment of..... 224
Cataleptic states..... 542
Catarrh, Nervous, see *Hay fever*; Argentamin for gastric —..... 118
Catarrhal pneumonia, 528; Exudative — tuberculosis..... 245
Catgut Preparation by Formalin and Boiling..... 523
Catgut prepared for abdominal work, 85; — sutures condemned, 325; to prepare sterilized —, 466
Catheterism for enlarged prostate, 272
Cauliflower excrescence of uterus, 419
Causative of disease, Heredity..... 65
Caustics and cautery for cancer, 425; — for epithelioma..... 478
Cautery, Actual, in eye operations, 226; — and caustics for cancer, 425
Celandine. See *Chelidonium*.
Cellulitis of hand, 672; Antistreptococcic serum for —..... 637
Cerebellar Tumor—Two Exploratory Operations..... 238
Cerebellar symptoms often obscure..... 242
Cerebellum (see *Brain*), Tumor of, 511
Cerebral (see *Brain*) abscess after ear disease, 202; — surgery, 442; middle — artery occluded..... 742
Cerebro-spinal meningitis, Eye symptoms in, 201; — — outbreaks, 593; Antistreptococcic serum for — —..... 637
Cervix uteri beyond vulva in labor, 166; — — lacerated, 314, 315, 546; Cancer of — —, 415; — — ruptured during labor..... 697
Charges for time..... 620
Charity, medical, Abuse of..... 514
Charming as a therapeutic agent.. 557
Chastity among Eskimos..... 251
Chelidonium majus for cancer..... 427
Chemosis..... 651
Cherokee nation practice law..... 158
Chest injuries and shock, Diagnosis 443
Chewing tobacco neuroses..... 511
Child resists infection better than adult..... 449
Child-bearing (see *Labor*) among Eskimos..... 251
Child's mouth, malignant disease in, 75; — head (see *Fœtus*) at birth..... 674
Children's summer diarrhœa, 408; Lactic acid for — — —, 96; splint for — fractured femur, 260; — liver..... 283
Chloasma in tuberculosis..... 279, 280
Chloral hydrate for cough of phthisis, 14; — to prevent morphia nausea..... 115
Chloride of ethyl, see *Ethyl chloride*; — — zinc, see *Zinc chloride*.
Chlorides in urine of pneumonia, 736
Chloroform in labor, 316; — evaporation degree..... 621
Choctaw nation practice law..... 158
Cholæmia..... 146
Cholecystectomy..... 503
Cholecystenterostomy..... 507
Cholecystitis and appendicitis, Diagnosis..... 708
Cholecystotomy..... 149
Cholelithiasis (see *Gall-stones*), Sequelæ and treatment, 18; Case of —, ... 107
Cholelithotomy..... 69
Cholera epidemics, 592; Serum therapy of —..... 637
Cholera-plasmin..... 718
Cholesteræmia and stercorin..... 144
Cholesterin..... 144
Chondro-costal dislocation..... 172
Chorea — Its Etiology, Pathology, Treatment..... 410
Chorea minor in epilepsy..... 542
Christian science..... 329, 670, 671
Chronically Diseased Tonsils..... 489
Chyluria, Rare case of..... 89
Cigarette smoking, 516; — paper contains arsenic..... 618
Cigarettes—Effects Compared..... 612, 619
Cigarettes forbidden minors in Indiana..... 307
Cigars, cigarettes and pipe smoke, 516
Ciliated Cells—Their Importance in Respiratory Tubes..... 577
Cilio-spinal centre for pupil..... 738
Circulation changes in tuberculosis..... 277
Circulatory irregularities, Deafness due to..... 230
Circumcision for epilepsy..... 393
Cirrhosis, Dyspeptic, 117, 208; hypertrophic — of liver..... 405
Civilization and disease..... 131
Clean Surgery in Minor and Emergency Cases..... 420
Climate for tuberculosis, 16, 17, 18; — of Alaska..... 252
Clinical Laboratory of Practitioner, 355
Clinics, Abuse of, 514; Hospital versus college —,..... 41
Coca erythroxylon, Early use of, 460; Spurious — wines..... 216

Cocaine Anæsthesia for Perineorrhaphy ... 445
Cocaine in Surgery ... 460
Cocaine and ichthyol for anal fissure, 91; Illinois — law ... 215
Codeine for cough of tuberculosis. 17
Cod-liver oil for phthisis ... 14
Cœliotomy, 143, — for typhoid perforation ... 517
Colds, Prescription for ... 604
Coley's fluid for sarcoma ... 679, 680
Colic and appendicitis, Diagnosis of, 710; Prescription for —, ... 719
Coli-toxin ... 117

Colleges, Universities, Hospitals, etc.:

Baltimore Medical College ... 304
Bellevue Hospital Medical College, 31, 127, 215, 304, 500
Chattanooga Medical College ... 305
Chicago Medical College ... 62
Columbian University, Medical Department ... 304
Cooper Medical College ... 692
Jefferson Medical College ... 305
Kentucky School of Medicine ... 536
Long Island College Hospital ... 64, 304
Maryland Colony for Epileptics ... 748
Medical College of Alabama ... 63, 304
Medical College of Virginia, 32, 60, 61, 125, 305, 750
Medico-Chirurgical College of Philadelphia ... 305
Missouri Medical College ... 215
New York University—Bellevue Hospital Medical College ... 31, 127, 215
New York University Medical School, 304
Northwestern University Medical School ... 304
Post-Graduate Medical School ... 304, 630
Rush Medical College ... 600
University College of Medicine, 31, 32, 94, 125, 305, 536
University of Alabama ... 63
University of Chicago ... 600
University of Maryland ... 61, 304
University of Michigan ... 124
University of Nashville, Medical Department ... 305
University of Virginia ... 61, 305
Vanderbilt University—Medical Department ... 305
Western Pennsylvania Medical College ... 305
Winyah Sanitarium ... 63, 599

College clinics, Hospital versus ... 41
Colleges should be examined, 332; medical — and State Examiners, 134; Medical — in United States ... 728
Colle's Fracture, Treatment of ... 186
Coloboma of Lens, Cases of ... 389
Colon absorbs saline solution, 689; Anastomosis of — and ileum ... 143
Colony plan for epileptics ... 370
Colorado's practice law, 158; — contribution to Rush monument 244
Columbus, Doctor population of ... 620
Comparison of mother's pelvis and fœtal head measurements ... 674
Compulsory diphtheria antitoxin. 727
Conception. See *Pregnancy.*
Concussion of brain ... 443
Confederate army and navy, Virginia surgeons in ... 727
Congenital resemblances ... 66
Conjunctival discharges clinically 358
Conjunctivitis and iritis, Diagnosis 362, 364
Connecticut practice law ... 158
Consciousness lost. See *Epilepsy.*
Constipation, Chronic — Its Treatment ... 483
Constipation in infants ... 719
Consumption and Its Treatment ... 185
Consumption (see *Tuberculosis*) and insanity in negroes ... 129
Consumptives, Persecution of ... 211
Contagious impetigo, Lassar's paste for, 184; — pneumonia ... 533
Continued malaria fever ... 601, 614
Contraction ring of uterus ... 697, 698
Contusion of brain, Diagnosis ... 443
Convergent strabismus ... 607
Convulsion, Epileptic ... 391
Convulsions. See *Eclampsia*, also *Epilepsy.*
Cord. See *Funis.*
Cornea inflamed. See *Keratitis.*
Corneal Ulcers — Their Treatment ... 292
Corpulency. See *Obesity.*
Coryza (see *Rhinitis*) and hay fever, Relations ... 463
Cough of phthisis, Opium, chloral, codeine, etc., for, 14, 17; Useless — mixtures, 185; — — tuberculosis, 220; — — enlarged lingual tonsil, 258; Codeia for — —, ... 452
Countenance in diseases ... 547, 562
Coup de soleil. See *Insolation.*
Cow's milk best artificial infant's food ... 487
Cramps as Affecting Stokers ... 552
Credé's placenta delivery, 310, 315, 342
Creosote for tuberculosis, 13, 17; Beechwood — in small doses ... 450
Crepitant Rale, Persistent ... 407
Crepitant rhoncus of pneumonia ... 570
Crime defined legally ... 747
Criminal trials and medical experts ... 746
Croup, diphtheritic, Antitoxin for, 193; Antitoxin and calomel for — —, ... 141
Croupous pneumonia ... 736
Cuminol ... 523
Curette in puerperal sepsis ... 152
Curriculum, Four years' graded ... 124
Curvature of spine, Diagnosis of ... 113
Cyanide injections in corneal ulcers ... 294
Cyanosis in nasal stenosis ... 622
Cystic gravel. See *Stone in bladder.*
Cystitis of stone, 15; Chronic — cause of abscesses of both kidneys, 101; Supra-pubic cystotomy for —, 119; — — calculus ... 168
Cystoma, nasal, Case of ... 44, 53
Cystopexia ... 299
Cystotomy (see *Bladder*, also *Lithotomy, Supra-pubic*), Supra-pubic, 16, 118; McGuire's — —, 272; — — for stone, 282; — for urinary retention ... 297
Cysts in hernia, 180; Ovarian — in negress ... 403
Czerny and Truneceк's formula for cancer ... 426

Deafness, Result of Circulatory and Pneumatic Irregularities ... 230
Death rates in United States ... 116
Defecation, Time for, 485; — in infants difficult ... 719
Deformities, Flexion, of knee-joint, Treatment ... 456
Delaware practice law ... 158
Delirium tremens of pneumonia ... 734
Delivery in vaginal atresia, 176; — after death ... 612
Dental Plate in Œsophagus — Its Removal ... 703, 713
Denver health ... 308
Dermatitis, Seborrhœic, and psoriasis ... 366
Dermatology (see *Skin*), Tuberculin in ... 526
Dermoid, Development of ... 5
Diabetes mellitus, Uranium for ... 719
Diabetic blood and aniline dyes ... 579
Diagnosis, Bacteriological, 317; Eye symptoms in — of meningitis ... 201
Diameters, mother's pelvic ... 674
Diaphragm paralyzed, due to myelitis ... 75
Diarrhœa of phthisis, Bismuth for, 14; Treatment of — — tuberculosis, 16; Lactic acid for summer — — children, 96; Summer — — children, 408; Treatment of — — —, ... 453
Diastase, 196; — in maltzyme ... 597
Diet and urea, 111; — treatment of constipation ... 483
Dietl's crisis and appendicitis, Diagnosis ... 710
Differentiation between sarcoma and carcinoma ... 59
Digestive Ferments ... 195
Digestive ferments, 207; — disturbance related to liver ... 283
Digitalis for pneumonia and influenza ... 87
Diphtheria Antitoxin in Laryngeal Diphtheria ... 193
Diphtheria and puerperium, 151; Antitoxin and calomel fumigations for —, 141; — — influenza again, 127; Antitoxin report of laryngeal —, 82; Bacteriology of —, 318, 323, 324; Goat's blood serum in —, 404; — cause of tonsillitis, 491; Serum therapy in —, ... 633, 639
Diphtheria antitoxin, 397, 594; — — improved, 75; — — curative, 466; — — used, 680, 681, 682, 683; — — compulsory, 727; Status of — —, ... 336
Diplopia, Homonomous ... 109
Discharges of Male Urethra ... 6
Dislocation of tendons, 77; Unusual types of — liable to be overlooked ... 172
Dispensary Abuse—Can It be Corrected? ... 514
Dispensary abuses, 306, 330; — — in New York, 62; How to correct — —, ... 694
District of Columbia practice law 158
Divergent squint ... 607
Diverticula of cholelithiasis ... 20
Doctor, see *Physician*; — in Eskimo, see *Shaman*; The forgotten —, ... 327
Doctor's salaries or fees, 61, 72; — clinical laboratory ... 355
Doctors in Congress, Kentucky, 61; Tax on — — North Carolina, 142; — — Columbus ... 620
Dogs and anthrax ... 237

Don'ts in surgery, Some..... 421
Dorsal nerve paralysis..... 738
Drainage in abdominal sections, 26; — of bladder..... 118
Dreams in epilepsy..... 542
Dropsy. See *Ascites.*
Drug Impressions, Influence of.. 253
Dry synovitis, Treatment of.. 80
Ductus communis choledochus cancerous..... 19
Dysmenorrhœa, Ovarian, 546; Mind cure for functional —, ... 670
Dyspepsia (see *Indigestion*) of tuberculosis..... 281
Dyspeptic cirrhosis, 117, 208; — diarrhœa..... 408
Dysphonia. See *Hoarseness.*
Dyspnœa—what was its cause?.... 407
Dystosia..... 373

Ear (see *Deafness*) abscess, 333; Middle — suppuration causes meningitis..... 201
Ebunation, Syphilitic..... 493
Eclampsia (see *Epilepsy*, also *Convulsions*), Guaiacol for puerperal 120
Ectopic gestation, Very early, 90; Vaginal section for —,..... 210
Ectopic Pregnancy Twice in Same Patient..... 643
Eczema cause of cancer.... 19
Education, Liberal, Influences Ethics 285
Education, medical, Four years' course 124
Ehrlich's solution for blood-staining 155
Elastic bandages, etc., wrong 80
Elbow sprain, Treatment 77
Electricity in practice, 28; — and rest for sprains, 117; — — menstrual disorders 411
Elevate the Profession in Country—How to..... 578
Elongation of cervix uteri beyond vulva in labor..... 166
Emergencies, Clean surgery in... 420
Emotion, morbid, deranges mind . 746
Emotionalism in brain disease..... 513
Empiricism, Study of 253
Empyema of gall-stone, 19; Diagnosis of — — antrum 554
English practitioners..... 750
Enostosis 493
Enteric and entero-miasmatic fever. 105
Enterolith causes intestinal obstruction, 434; Diagnosis of — and appendicitis 710
Enzymes, 196; Pancreatic —,..... 207
Epidemics and U. S. M. H. Service, 675; National quarantine and —,.....561, 565, 658, 715
Epiderm dophton 365
Epilepsy. 391
Epilepsy—A Study of..... 537
Epilepsy, Cholesterin possibly in, 146
Epileptics in Virginia, State care of..... 369
Epithelial cells, Ciliated 577
Epithelioma—Various Treatments of 478
Epithelioma (see *Cancer*) of cervix uteri..... 419
Equality of medical standards 135
Ergot in labor..... 311, 342, 343
Erysipelas and puerperium, 150; — streptococcus for cancer, 425; Antistreptococcic serum for —, 637, 641
Erysipelatous toxin for sarcoma, 679, 680
Erythematous lupus. See *Lupus.*
Erythismus tropicus. See *Insolation.*
Erythroxyline, Early use of..... 460
Esquimaux. See *Eskimo.*
Eskimo and syphilis..... 251
Essential epilepsy..... 538
Ether danger signals, 215; — shock, 471; — dangers..... 621
Ethics, Liberal education and..... 285
Ethyl chloride for epithelioma.... 478
Ethylendiamine 118
Eucaine as anæsthetic..... 461
Euplastic lymph..... 1
Evil, social, in Japan regulated . 686
Evils that Threaten the Medical Profession 72
Examiners, Insurance, fees..... 331
Examining Boards (see *Reciprocity*), Interstate, 133; Medical — —, 332; State — —,..... 352
Excision of knee, Phelps' rapid.... 469
Exophthalmic goitre, Gouty, 465; Thyroid therapy for — —,...605, 618
Expectoration of tuberculosis 220
Expert, Medical, 745, 747; — — fees, 331; — testimony compulsory in Illinois..... 599
Expression of placenta, 310, 315, 342; — — face in different diseases 547, 562
Extract, Thyroid, see *Thyroid extract;* Watery — of bacilli and glycerin for tuberculosis. 721
Extraction of tooth, Fatal hæmorrhage after..... 750
Extra-uterine gestation (see *Ectopic gestation*), 90; Operation for — fœtation..... 69
Extrinsic muscular system, Late syphilis of..... 108
Exudative catarrhal tuberculosis. 245
Eye Symptoms in Diagnosis of Meningitis..... 201
Eye, see *Iritis Keratitis, Coloboma, Corneal, Ophthalmic*, etc.; — surgery, see *Cataract;* — paralysis due to late syphilis..... 108
Eyes, Sore. See *Ophthalmia.*

Facial Manifestations of Diseases. 547, 562
Facial neuralgia of pregnancy..... 359
Facies epilepticus 541
Fæcal impaction (see *Constipation*), 480, 495, 496
Fæces clinically, 357; Stercorin in —,..... 144
Faith cure. 670, 671
Fallopian tubes. See *Salpingitis.*
Faradism, Uses of.. 28
Fatty Liver, with Report of Case .702, 712
Fatty liver, 284; Masquerades of — ills..... 727
Faucial tonsils, 490; Treatment of hypertrophied — —,.....257, 270
Faverwether estate gives University of Virginia..... 61
Feeding Artificial infant 486
Fees of doctors, 61, 331, 632; Medical — in Georgia..... 578
Felon, Treatment of..... 673
Femur fractured, Van Arsdale's splint for..... 260
Fenwick's section of bone 471
Ferments, Digestive... .....195, 207
Fever, Hay, *Hay fever;* Hectic —, see *Hectic fever;* Heat, sun, thermal, etc., —, see *Insolation;* Typhoid —, see *Typhoid fever;* Typho-malarial —, see *Typho-malarial fever;* Typhus —, see *Typhus fever;* Yellow —, see *Yellow fever;* Alcohol for — of phthisis, 14, 16; Puerperal — (see *Septicæmia*, also *Sepsis*), 150; — of tuberculosis..... 219
Fevers and infections in Iceland... 251
Fibroid tuberculosis, 245; Surgery for — of uterus..... 435
Fibroids of uterus, 379, 434; Section for — — —,..... 27
Fibroma of uterus, Medical treatment..... 59
Fibro-sarcomatous tumor of cerebellum 238
Fibrous pneumonia. 528
Finger, Abscess of..... ..... 672, 673
Finger-nails of tuberculosis..... 280
Fingers strained..... 77
Fissure of anus (see *Anal fissure*), Ichthyol for..... 750
Fistula, Biliary, of cholelithiasis... 20
Fixations of uterus, Ventro-..... 115
Flat foot due to ankle-joint injury. 79
Flechsig's opium treatment of epilepsy..... 545
Flexion Deformities of Knee-joint, Treatment..... 456
Floating kidney with adhesions... 433
Flora, Medical, Study of American 206
Florida and West Virginia healthiest of States, 84; — practice law..... 158
Focal epilepsy..... 537
Fœtal head measurements..... 674
Fœtation (see *Gestation*), Extra-uterine 69
Fœtus, Asphyxia of, Treatment... 312
Forceps, Improved Traction Rod.... 291
Forceps delivery with cervix uteri beyond vulva, 166; Abuse of obstetric —,..... 437
Foreign bodies in bladder cause stone..... 15
Forgotten Doctor, The 327
Formaldehyd.. 523
Formalin to prepare catgut, 523; — antiseptic wash..... 575
Formative osteitis, Syphilitic..... 493
Four-year medical course 124
Fracture, Plaster or wood-fibre treatment of, 175; Colles' treatment of —, 186; Van Arsdale's splint for — of femur..... 260
Fractures and Dislocations—Unusual Types Liable to be Overlooked.. 172
Frazier-Lentz hot air apparatus... 367
Freezing for epithelioma..... 478
Friedreich's disease (see *Locomotor ataxia*). 208
Friere's diluted virus for yellow fever..... 635
Frostbite in Arctic, No suppuration 250
Fruits for constipation..... .. 484
Fulminant appendicitis.....34, 585

Fumigations, Calomel, for diphtheria 141
Funis (see *Cord*), Treatment of..... 312

Gall-bladder and Ducts, Surgery of 501
Gall-bladder, Function of, 21; — surgery —,..... 107
Gall-stone (see *Cholelithiasis*), 146; Symptoms, treatment, etc., of —, 18; — operations, 22, 23, 504; Diagnosis and treatment of —, 25, 26; — cause of hypertrophic cirrhosis, 406; Large — passed, 495; — mistaken for appendicitis 724
Gall-tract obstruction and appendicitis, Diagnosis..... 707
Galvanism, Uses of..... 28
Galvano-cautery for epithelioma.. 479
Gangrene, Pulmonary..... 734
Garlic in Arctics..... 253
Gastralgia, Mind cure for 670
Gastric Disturbances During Gestation..... 654
Gastric (see *Stomach*) catarrh, Argentamin for, 118; Prescription for vomiting of — cancer, 179; Treatment of — disorders of phthisis..... 453
Gastrodynia, Prescription for..... 719
Gastro-enteric and appendicitis, Diagnosis..... 710
Gastro-intestinal and Hepatic Relations of Gout..... 204
Gastro-intestinal troubles of children 409
Gastrotomy, Simple method..... 121
Geisha, or dancers. 686
Germ treatment of tuberculosis... 720
Germicidal action of formaldehyd 525
Germicides in after-treatment of cataract..... 224
Georgia practice law..... 158
Gestation, Normal and Ectopic Coincident..... 644
Gestation (see *Fœtation*), Tubal and appendicitis, Diagnosis 709
Giants in those days..... 624
Gibney dressing for sprained ankle 78
Glandular suppuration, carbolic acid prevents scarlatinal..... 684
Glans penis..... 393
Glaucoma and iritis, Diagnosis of, 363, 364
Glioma, Treatment of.....241, 242
Glycerin extract of bacilli for tuberculosis, 721; Sterilized — for uterine fibroids, 59; — to sweeten infant's food 488
Glycosuria, Uranium nitrate for... 719
Glycozone for gonorrhœa..... 660
Goat's milk and blood serum in disease..... 404
Goitre, Exophthalmic, Gouty, 465; Thyroid therapy for — —,...605, 618
Gonorrhœa, Argentamin for, 118; Bacteriology of —, 318; Glycozone and hydrozone for —,..... 660
Gonorrhœal Ophthalmia 651
Gout (see *Lithæmia*) causes bladder-stone, 15; — due to metabolism, 162; Stomach and liver in —, 204; Hot-air apparatus for —, 367; — tendency..... 438
Gouty liver, 117; — — and dyspeptic liver, 209; — diathesis and dyspeptic cirrhosis, 209; — neuroses, 464; Pulverized thyroid for — plethora 606
Grand mal 537
Granose for constipation..... 484
Gravel. See *Stone*.
Greenland, Marriage in..... 251
Grip, The (see *Influenza*), and pneumonia..... 537
Grubler's stains for microscopy.... 156
Guaiacol for puerperal eclampsia, nephritis, etc., 120; — hypoderms for tuberculosis..... 451
Gymnastics, Swedish, for constipation..... 484
Gynæcology in Women's Hospital, Philadelphia 197

Habit-cases, Mind cure for..... 670
Hæmatemesis, see *Vomiting of blood*.
Hæmatidrosis (*Blood-sweating*)..... 102
Hæmatocele, Vaginal section for.. 210
Hæmotoma, Vaginal section for.... 210
Hæmoptysis of phthisis, Quinia for, 14; Treatment of — of tuberculosis, 16; Tubercular —,. 221
Hæmorrhage, Circumscribed Pelvic, Treatment..... 205
Hæmorrhage from lungs, see *Hæmoptysis*; — from womb, see *Menorrhagia*; — after labor, 311, 313, 316; Unavoidable —, 374; Diagnosis of — and shock, 441; Treatment of — of phthisis, 452; — of typhoid fever, 517; spinal —,..... 739
Hæmorrhoids, Internal, Treated by Ligature 45
Hæmorrhoids, External, Medical treatment, 59, 97; Substitute for Whitehead's operation for —,... 384
Haffkine's anti-cholera inoculations..... 688
Hair-pin nucleus of stone 15
Hallucination in disease.. 560
Hand tendons displaced, 77; Inflammatory — disease..... 672
Hansen's bacillus cause of leprosy 597
Hay Fever and Coryza, Relations and Treatment..... 463
Head of child at birth..... 674
Headache, Cerebellar, 238, 242; — of brain lesions..... 512
Headache, Lithæmic 161
Health of Southern States, 84; Public — involved in medical licensure, 138; — of Denver, 308; State — Boards..... 352
Hearing affected by adenoids..... 609
Heart, see *Pericarditis*; Ruptured — valves, 233; — changes in tuberculosis, 277; — on right side, 297; — in pneumonia, 528, 529
Heat apoplexy, or asphyxian, or fever, or stroke. See *Insolation*.
Hebephrenia..... 743
Hectic fever, Treatment.....14, 16
Height of man..... 624
Helminthiasis, Intestinal, diagnosed..... 724
Hematokolpos..... 8
Hemi-paraplegia, Case of..... 738
Hemiplegia, 75; Reflex —,..... 742
Hepatic (see *Liver*) cancer due to gall-stone, 18, 21, 22; — relations of gout, 204; Surgery of ducts, 501; — abscess..... 501
Heredity as a Causative Factor in Disease..... 65
Heredity and epilepsy, 392; Paternal — of cancer..... 424
Hernia, Ventral, Causes of, 27; Bassini operations for inguinal —, 180; Operations for scrotal —, 180; Treatment of — Cases, 326; Omental — strangulated, 435; Radical cure for inguinal —, 446; De Garmo's — operations 684
Herniotomies..... 69
Herniotomy, Bassini's inguinal.... 448
Hetairæ in Japan.....686
Heterology defined..... 2, 4
Heteroplastic growths..... 1
Hiccough, Capsicum for, 196; Mind cure for — ,..... 670
Histological differentiation between sarcoma and carcinoma... 59
History of Medicine in Virginia, 244; Prize for — — — — —,..... 371
Hoarseness due to enlarged lingual tonsil 258
Homicidal mania..... 752
Homœopathy, Present practice of, 527
Homonomous diplopia..... 109
Homoplastic growths..... 1
Horse-blood serum, Normal, for tuberculosis..... 234
Hospital Clinics versus College Clinics..... 41
Hospital abuses in New York, 62; Woman's — statistics, 197; — business, 330; C. & O. —, 404; Marine — Service and epidemics, 675; Gift of — for Women.. 705
Hot-air apparatus for rheumatism, etc 367
Hour glass Contraction of the Uterus, 665
Hour-glass contraction.....311, 313, 316
Howship's lacunæ..... 494
Hydriodic acid for tonsillitis.. 492
Hydrogen sulphide odor in antral abscess, 554; — peroxide in infection 581
Hydrophobia (see *Rabies*), Serum therapy of 636
Hydrophobin mentioned..... 633
Hydrotherapy for constipation..... 485
Hydro-thorax of pneumonia..... 734
Hydrozone for gonorrhœa 660
Hyoscyamine for paralysis agitans, 212
Hyperidrosis 103
Hyperostosis 494
Hyperpepsia..... 483
Hyperplastic tonsil..... 490
Hypertrophic or Biliary Cirrhosis .. 405
Hypertrophic tonsils 490
Hypertrophies, Anterior turbinate 549
Hypertrophy of Lingual Tonsil..257, 270
Hypertrophy of prostate, Urinary retention.....271, 297
Hypnotism in medicine..... 670
Hypodermic Syringe—Its Use in Malaria..... 454, 510
Hypodermic syringe improved.. .. 402
Hypodermics of quinia..... 603
Hypopepsia 483

Hypophosphites for tuberculosis.. 14
Hysterectomies, Supra-vaginal and vaginal, 68, 69; Group of —,..... 434
Hysterectomy, Ninety Cases 379
Hysterectomy, Abdominal, Technique, 288; Early — for uterine cancer 416
Hysteria, Uric acid in, 165; — and neurasthenia, 182; Diagnosis of — and cerebellar tumor, 511; Diagnosis of — and epilepsy, 542; Mental impression for —,..... 670
Hysterical joint.. 81
Hystero epilepsy, Diagnosis..... 542

Iceland, Infectious diseases in..... 251
Ichthyol for tuberculosis, 13; — for female diseases, 53; — and cocaine for anal fissure..... 91
Ichthyosis cause of cancer, 19; — istrin (?) Tuberculin for..... 526
Icteroide bacillus, Sanarelli's...300, 595
Icterus neonatorum (see *Jaundice*), 107; Cholesterin in — gravis,... 145
Ictus solis. See *Insolation.*
Idaho practice law..... 159
Ileo-colic invagination and appendicitis, Diagnosis 709
Ileum and colon, Anastomosis of, for obstruction of cæcum..... 143
Ileus (see *Obstruction, Intestinal*), 430; Diagnosis of — and appendicitis 707
Illegal practice in Louisiana, Arrest of..... 727
Illinois practice law, 159; — cocaine law, 215; Expert testimony compulsory in —,..... 599
Imagination in disease..... 560
Immunization by tuberculin.....47, 51
Immunizing by serum, 679; Murray's — method 635
Impacted fæces.....480, 495, 496
Impaction, Cæcal and appendicitis, Diagnosis..... 710
Imperial Granum.....121, 296, 610
Impetigo, Contagious, Lassar's paste for..... 184
Impression, Mental, as therapeutic agent 556
Impressions of drugs, Influence of..... 253
India, Haffkine's inoculations in.. 688
Indian Territory practice law..... 159
Indiana practice law, 159; — forbids cigarettes to minors..... 307
Indicanuria..... 161
Indigestion (see *Dyspepsia*) causes cystic gravel, 15; Liver related to — in children, 283; Diagnosis of — and appendicitis..... 709
Infant-feeding, Artificial, 486; — one day old vomits blood..... 585
Infantile scurvy, 340; — defecation difficult 719
Infants, Van Arsdale's splint for femur fracture. 260
Infection of malignancy, 5; — by gall-stone, 21; Peritoneal — after supra pubic, 282; Surgical — resisted better by child than adult, 449; Puerperal —,.....575, 580
Infectious pneumonia..... 528
Inferior Turbinate—Treatment of Puffy Conditions..... 549
Inflammation can be cured 572
Inflammatory Diseases of Hand 672
Influence of Mind upon Body..... 669
Influenza in Virginia, 53; Digitalis for — and pneumonia, 87; — and diphtheria, again, 127; — and tuberculosis, 218; pneumonia of —, 527; Serum therapy of —,..... 637
Inguinal Hernia?—Have We a Radical Cure for..... 446
Inheritance. See *Heredity.*
Inhibiting effect of potassium iodide..... 321
Innuits. See *Eskimo.*
Inoculation against small-pox..... 633
Inoculations, Anti-cholera..... 688
Insane epileptics, Care of..... 370
Insanity and Consumption—Increase among Negro Population..... 129
Insanity defined legally, 746; — — medically, 747; Medical jurisprudence of —,..... 745
Insolation (see *Sunstroke*)..... 54
Insurance examiners' fees..... 331
Intermittent fever rare in Savannah 616
Interstate licensure..... 133
Intestinal (see *Bowel*) obstruction due to gall-stone, 21; — surgery, 143; Gastro — troubles of children, 409; — paresis from nerve injury, 429; Post operative — —, 429; — — by enteroliths, 434; Operation for — —, 497; Diagnosis of — indigestion and appendicitis, 710; — worms diagnosed..... 724
Intestine, (see *Bowel*) exposed four hours 435
Intestines, stomach and liver in gout..... 204
Intubation in diphtheria, 83; — and antitoxin..... 194
Inversion of Uterus Hours after Labor 488
Inversion of uterus, Post-partum.. 112
Iodide of potassium, Inhibiting effect of..... 321
Iodythyrin in corpulence..... 605
Iowa practice law.....159, 214
Iridectomy in ophthalmia..... 606
Iris prolapsed, Treatment of. 226
Iritis, Differential Diagnosis of..... 361
Isopathy..... 633
Itching. See *Pruritus* and *Urticaria.*

Jacket, Straight, Obstetric 187
Jacksonian enilepsy..... 537
Japan, Lepers in, 624; Social evil regulated in —,..... 686
Jaundice (see *Icterus*) of cholelithiasis, 20; — and biliousness, 104, 106; Cholesterin in —,..... 145
Jealousy among doctors..... 72
Jequirity for trachoma..... 211
Jerks, Mind cure for 671
Jigoku, or unlicensed prostitutes.. 686
Joint, Knee, see *Knee Joint;* Speedy treatment of sprained, 117
Joints (see *Arthritis, Sprains, Synovitis*), Sprained, Treatment, 76; Prescription for painful —,..... 719
Journals:
British Medical Journal..... 693
Columbus Medical Journal..... 64
Daily Lancet..... 307
Georgia Journal of Medicine and Surgery 568
Laryngoscope..... 567
North Carolina Medical Journal..... 750
Philadelphia Medical Journal..... 568
Virginia Medical Semi-Monthly..... 749
Western Medical & Surgical Gazette.. 500
Jurisprudence of insanity, Medical 745

Kader's gastrostomy..... 121
Kapoplastic growths..... 1
Kangaroo tendon sutures..... 326
Kansas reform movement, 726; No practice law in —,..... 159
Kentucky Senator, etc., an M. D., 61; — practice law..... 159
Keratitis, 292; Treatment of Phylctenular —,..... 386
Kidney (see *Renal*) abscess, Case, 76; Surgery of —, 149; — Surgical, 16; — floating with adhesions, 433; — and gout, 438; Diagnosis of — colic and appendicitis 710
Kidneys, Abscesses of, due to chronic cystitis, 101; — in operations for vesical calculus, 169; — and gout 204
Kleb's antiphthisin for tuberculosis 721
Klondike, Reminiscences of, 252; — doctors must be examined... 694
Knee sprain, Treatment, 77; Phelp's operation for — excised. 469
Knee-joint deformities, Flexion, Treatment 456
Koch's Latest "New Tuberculin"... 47
Koch's new tuberculin, 28, 596; — modified tuberculin, 450; — tuberculin and T. R. tuberculin, 636; — tuberculin for tuberculosis..... 721
Koprosterin (see *Stercorin*)..... 144

Labor with Os Externum Two Inches beyond Vulva..... 166
Labor, Third Stage, Management of 309, 341
Labor, Abdominal palpation aids, 116; Asepsis and antiseptics in —, 151; Vaginal atresia and stenosis in —, 176; — among Eskimos, 251; Antikamnia for — pains, 270; Uterus inverted hours after —, 488; Hour-glass contraction in —, 665; Uterus ruptured during —,..... 697
Laboratory of practitioner, Clinical 355
Lacerated cervix, Seat of cancer... 418
Laceration of perineum, mechanism, etc., 139; — of cervix and perineum, 314, 315; — of cervix (see *Cervix*),..... 546
Lactation and antipyrin..... 623
Lactic acid for summer diarrhœa.. 96
La grippe. See *Influenza.*
Laparotomy (see *Abdominal operation, Abdominal sections*, etc.,) in America 716

Laryngeal Diphtheria, Antitoxin and Calomel for... 141
Laryngeal diphtheria, Antitoxin report, 82; Antitoxin for — —, 193, 633, 634, 639, 681
Laryngitis due to enlarged lingual tonsil... 258
Lassar's paste for contagious impetigo... 184
Law, Iowa practice, 214; Illinois cocaine —, 215; Ohio medical — sustained... 306
Lawn-tennis leg... 77
Laws of various States, Medical practice... 158
Legal medicine and insanity... 745
Legislation, Medical, needed, 328; Medical —... 630
Lemon in malarial fever... 603
Lens, Cases of coloboma of... 389
Lent-Frazier hot-air apparatus... 367
Lepers in Japan... 624
Leprosy, Serum treatment, 237; Hansen's bacillus of —, 597; Serum therapy of, —, 636; Conclusions concerning —... 660
Lepto-meningitis, Eye symptoms in... 201
Leucoma adherens... 606
License tax on doctors in Virginia, 30; — — North Carolina doctors... 142
License taxes of doctors... 331
Licensed to practice in Virginia, June, 1897... 267
Licensure, Reciprocity in medical 133
Licentiates, North Carolina, List, 190
Ligamentous relaxation... 79
Ligature treatment of internal piles, 45; Catgut — prepared with formalin... 523
Ligatures for laparotomy prepared 85
Lingual tonsil, 490; hypertrophied — —, Treatment of... 257, 270
Lip, Perforating ulcer of... 712
Listerism... 148
Lithæmia (see *Gout, uric acid*, etc.), 439; Stomach and liver in —, 204; Hot-air apparatus for —, 367; — in neuroses... 744
Lithæmic Tendency... 438
Lithæmic headaches... 161
Lithia water. See *Buffalo Lithia.*
Lithiasique liver... 117
Litholapaxy... 120, 167
Lithotomy, Supra-pubic (see *Cystotomy, Supra-pubic*)... 167
Liver Troubles, Overlooked Points in, 104, 106
Liver, Relation of Disturbances of Digestion to... 283
Liver (see *Hepatic*) symptoms of gall-stone, 18; — abscess, 19; Dyspeptic —, 117; Congestion of —, 117; Functions of —, 145; — in gout, 204; Dyspeptic cirrhosis of —, 208; — on left side, 297; Hypertrophic cirrhosis of —, 405; — and gout, 438; — ducts, 501; Case of fatty —, 702, 712
Localizations, Cerebellar... 242
Lock-jaw. See *Tetanus.*
Locomotor ataxia, Pathogenesis of 208
Louisiana practice law, 159; Arrest of illegal practice in —, 727; — State Board of Health, 727; — Board of Medical Examiners... 727
Love as a disease... 560
Lung Fever... 729
Lung, see *Pneumonia*; — hæmorrhage, see *Hæmoptysis.*
Lupus, erythematosus agminatus, Tuberculin for... 526
Luxations. See *Dislocations.*
Lymph, Euplastic... 1
Lymphangitis, Carcinomatous... 427
Lymphatic diathesis, Results of... 491

Maine practice law... 159
Malaria and race, 116; — — tuberculosis, 217; — a cause of rheumatism and chorea, 410; Hypodermic syringe in —, 454, 510; Quinia not specific in —, 601, 614; — subcontinua typhoidea... 601, 614
Malarial fever, Typho-, 353; — — —, a misnomer, 202: What is — — ? 104; — organisms, 358; Quinia in — hæmaturia... 616
Malignant Factor in Tumors... 1
Malignant (see *Cancer*) disease in child's mouth, 75; — neoplasms 347
Maltzyme active... 597
Mamma (see *Breast*) cancer, Diagnosis... 424
Mania, acute, due to constipation, 483; Epileptic —, 749; Reasoning —... 747
Manufacturing chemists... 330
Maragliano's serum for tuberculosis... 28, 636
Marchand's hydrogen peroxide... 581
Mariani wine, Spurious... 216
Marine Hospital Service quarantine, 561, 565; — — — and epidemics... 675
Marmorek's fluid... 680
Marriage of epileptics, Prevent... 545
Marsden's epithelioma paste, 478, 479
Maryland practice law... 159
Massachusetts practice law... 159
Massage for sprains, etc., 80; — in drug habit cases... 671
Mastoid disease and brain abscess, 202; — — — ear abscess... 334
McGuire's (Hunter) button, 118; — supra-pubic cystotomy... 272, 297
Medical Jurisprudence of Insanity... 745
Medical profession, Evils that threaten the, 72; Four years' — course in colleges, 124; — practice laws, 158; Study of American — flora, 206; — reminiscences of Arctic, 250; — legislation needed, 328; Abuse of — charity, 514; — students admitted in Paris, 669; — students to be examined, 695; — professional reform, 726; — colleges in the United States, 728; — expert... 745, 747
Medicine, Address in, 154; Practice of —, 10; — man in Eskimo, see *Shaman*; History of — in Virginia... 371
Medicines, Confusion in... 254
Meisophobia... 743
Melancholy (see *Nervous disease*), Antikamnia for, 229; Mind cure for —... 670
Meningitis (see *Cerebro-spinal meningitis*) and ear abscess, 334; Eye symptoms of —, 201; Cerebro-spinal — epidemics... 593
Menorrhagia in Alaska, Treatment, 251; Thyroid extract for climacteric —... 59
Menstruation in Alaska, 251; Vicarious — by blood sweat, 102; — and chorea... 411
Mental Impression as Therapeutic Agent... 556
Mental disease, see *Insanity*; — therapeutics... 670
Menthol for neuralgia, 160; — — pruritis, 157; — — vomiting of pregnancy... 152, 204
Mercury treatment of gumma, glioma, etc... 241
Mery's operation for urinary retention... 297
Mes-ethmo vomerine suture... 550
Metabolism, 438; Uric acid in neurasthenic —... 161
Methylene blue for cancer... 426
Miasmatic fever. See *Malarial fever.*
Michigan practice law, No... 159
Micrococcus xanthogenicus... 635
Microscopy, Ehrlich's solution for blood... 155
Micturition due to stone... 15
Milk prophylactic of scarlatinal nephritis 96; Goat's — in wasting diseases... 404
Miller's (Mrs.) Hospital for women... 705
Mimetic joint... 81
Mimmicry neuroses, Mind cure for 670
Mind impaired by epilepsy, 748, 749; Influence of — upon body 669
Mineral springs in Alaska... 251
Minnesota a leader in medical examinations, 137; — practice law 159
Minor surgery, Clean... 420
Mississippi practice law... 159
Missouri practice law... 159
Montana a leader in medical examinations, 137; — practice law 159
Montreal, Doctors invited not to visit... 215
Morbus Herculeus, see *Epilepsy*; — coxæ... 113
Morning sickness (see *Pregnancy*) of pregnancy... 654
Morphia (see *Opium*) antidotes cocaine, 461; Chloral to prevent — nausea... 115
Mosquitoes in Arctic... 252, 253
Mothers' pelvic diameters... 674
Mouth, Malignant disease in child's... 75
Mouth-breather... 609, 620
Mumps (see *Parodititis*), Prescription for... 182
Murphy's button... 143
Murray's immunizing method... 635
Muscles strained and dislocated... 76, 77
Muscular system, Extrinsic, Late syphilis of... 108
Mutual Aid Society, Physician's... 214
Myalgia of tuberculosis... 280
Myelitis and paraplegia, Case... 75
Myoma and cancer of uterus... 419

Myomectomies..... 68
Myomectomy, 384; — by vaginal section..... 210
Myxœdema, Thyroid therapy for 618

Nails, Finger, of tuberculosis... 280
Nasal Cystoma, Case of..... 44, 53
Nasal stenosis, Anæsthesia in..... 622
Naso-pharyngeal cause of deafness 230
National Quarantine..... 658
National Quarantine — Protest Against..... 561, 565
Nausea and Vomiting of Pregnancy 412
Nausea of morphia, Chloral for, 115; method for — — pregnancy, 204; — — pregnancy..... 654
Naval hospital corps proposed, 695; American medical service 667
Nebraska practice law..... 159
Negro statistics in United States, 116; Multilocular ovarian cysts in —,..... 403
Negroes, Insanity and consumption in..... 129
Neoplasms, Division of, 1; Malignant —,..... 347
Nephrectomy for kidney cancer... 68
Nephritis (see *Renal*, also *Kidney*) and Surgery, 110; Milk prophylactic of scarlatinal —, 96; Purulent —, see *Pyelo-nephritis;* Guaiacol for —,..... 120
Nephroptosis and appendicitis, Diagnosis..... 710
Nephrorrhaphies for movable kidney..... 68
Nerve exhaustion, see *Neurasthenia.*
Nervous catarrh, see *Hay fever;* — disease, see *Melancholy;* Consumption a — disease, 131; — disease due to swollen turbinates..... 358
Neuralgia in joints after injury, 78; appreciation for —, 160; — of tuberculosis, 280; — during pregnancy, 359; Sodium salicylate for trifacial —, 361; Prescription for —,..... 719
Neurasthenia..... 508
Neurasthenia an Abdominal Neurosis..... 182
Neurasthenia, 744; Role of uric acid in —, 161; Mind-cure for — 670
Neuritis, Optic, in cerebellar disease..... 241
Neurological Cases Successfully Treated..... 742
Neuropath, Treatment of..... 557
Neurosis, Abdominal, Neurasthenia an, 182; — of space-center... 744
Neuroses? What Are..... 295
Neuroses, Gouty, 464; Tobacco —, 515; Mind-cure for functional — 670
Nevada practice law, No..... 159
New Hampshire practice law.... 159
New Jersey practice law..... 159
New Mexico practice law..... 159
New tuberculin, Koch's..... 47, 596
New York hospital and dispensary abuses, 62; — — licensure law, 137; — — practice law, 159; — — water causing cramps, 552; — — law on illegal practice, 693; — — Code and insanity..... 746, 750
Nicotine poisonous, 515; — in cigarettes, 613, 619; — affects vagus..... 614, 619
Night sweats of phthisis, Treatment, 14, 16, 453; — — — tuberculosis, 278; — terrors due to preputial irritations..... 539
Nitrate uranium. See *Uranium.*
Nitrates and nitrites, Normal..... 227
Non-pathogenic, Germs of Arctic are..... 250
Normal Blood Serum for Tuberculosis..... 234
Normal saline transfusion..... 517
North Carolina tax on doctors, 142; — — practice law..... 159
North Dakota practice law..... 159
Nose. See *Nasal, Naso-pharyngeal, Turbinate, etc.*
Nuclein for tuberculosis..... 186, 721
Nutritional diseases, Thyroid therapy for..... 605, 618

Obesity, Thyroid therapy for, 605, 618

Obituaries:
Barr, Dr. Wm. F..... 216
Bemiss, Dr. John H..... 340
Brown, Dr. Bedford..... 372
Cooper, Dr. Wm. D..... 468
Dismond, Dr. Samuel H..... 728
Hart, Mr. Ernest..... 632
Hays, Dr. J. Mack..... 128
Kollock, Dr. Cornelius..... 308
Lindsley, Dr. John Berrien..... 696
Luck, Dr. William Welby..... 728
Lusk, Dr. Wm. Thompson..... 216
Moore, Dr. Thomas Jefferson..... 696, 728
Nalle, Dr. James Russell..... 64
Neblett, Dr. Norman H..... 568
O'Dwyer, Dr. Joseph..... 632
Parvin, Dr. Theophilus..... 664
Pulliam, Dr. Robt. Madison..... 340
Rieketts, Dr. Girard Robinson..... 404
Shields, Dr. Chas. M..... 64
Smith, Dr. J. Lewis..... 216
Talley, Dr. Alexander Nicholas..... 308
Terrell, Dr. John C..... 96
Zacharin, Dr..... 632

Obstetric straight-jacket, 187; abuse of — forceps..... 437
Obstetrics. See *Labor.*
Obstipation (see *Constipation*)..... 480
Obstruction of Bowel by Carcinoma..... 479, 495
Obstruction of bowel due to gall-stone, 21; Anastomosis for — — —, 143; Post operative — — —, 429; — — — by enteroliths, 434; Operation for — — —, 497; — in pneumonia..... 521, 527
Occlusion of cæcum cause of fulminant appendicitis, 586; — — middle cerebral artery..... 742
Ocean vessels, Surgeons needed on 566
Œdema after sprains..... 803
Œsophagotomy, Dangers of... 704, 713
Œsophagus, Teeth in, removed..... 703, 713
Ohio practice law, 159; — medical law sustained, 306; effects of — Medical Examining Board..... 728
Oil. See *Cod-liver Oil.*
Oklahoma practice law..... 159
Oilve oil for gall-stones..... 24
Omental Hernia strangulated..... 435
Omentum excised for hernia..... 180
Oöphorectomy, Mind cure instead of, 671; Salpingo —,..... 383
Operative, Post-, intestinal paresis 429
Ophthalmia, Gonorrhœal..... 651
Ophthalmic Clinical Notes..... 606
Ophthalmoplegia..... 108
Ophthalmoscopic diagnosis of meningitis..... 201
Opium (see *Morphia*) for cough of phthisis..... 14, 17
Optic neuritis in cerebellar trouble 241
Oregon practice law..... 159
O'Reilly's device for artificial respiration..... 116
Organs of body transposed..... 279
Orificial surgery, Instruction in .. 306
Orrhotherapy and bacteriology... 148
Osteitis, Syphilitic formative..... 493
Osteoclasts..... 494
Osteomyelitis, Resection for..... 471
Osteophytes..... 494
Osteoporosis..... 494
Osteosclerosis..... 494
Ostitis of hand..... 672
Otitis media, Suppurative, causes meningitis, 201; Suppurative — 334
Ovarian cysts, Vaginal section for, 209; Multilocular — — in negro, 403; Diagnosis of — disease and appendicitis..... 708
Ovaries and mind-cure..... 671
Ovariotomies for large tumors..... 68
Ovaritis and appendicitis, Diagnosis..... 36
Ovary in hernia, 180; Operations for diseased —,..... 546
Overt act in insanity..... 750

Pachymeningitis..... 241
Pad, Antiseptic, after labor..... 187
Pain, Antikamnia for, 404; Treatment of — of tuberculosis, 16; — about umbilicus in cancer of womb..... 600
Palpation, abdominal, aids labor.. 116
Palsy, Shaking, see *Paralysis agitans.*
Pancreas, Surgery of..... 149
Pancreatic enzymes..... 207
Pannus, Jequirity for..... 212
Papine as pain reliever..... 724
Paquin's antitubercle serum, 16, 18, 256, 721
Paquin's serum in tuberculosis, 300, 450, 636
Paracentesis corneæ..... 295
Paracentesis pericardii..... 99
Paralysis agitans, Hyoscyamine for, 212; — of myelitis, 75; — of eye due to late syphilis, 108; Spinal —,..... 738
Paraplegia, Hemi-..... 738
Paraplegia and myelitis, Case..... 75
Paresis, intestinal, Post-operative, 429
Paris, Medical students re-admitted in..... 669
Paronychia, Treatment..... 673
Parotiditis (see *Mumps*), Prescription for..... 182
Parturition, see *Labor.*
Passiflora incarnata for epilepsy... 545
Paste, Marsden's, see *Marsden's* —; Lassar's — for contagious impetigo..... 184
Patent medicines, Evils of prescribing..... 73
Paternal transmission of cancer... 424
Pathology, Position and needs of..... 243

Pay of doctors (also *Fees*) 72
Pedicle twisted and appendicitis, Diagnosis 709
Pelvic abscess, Case, 433; — diaphragm, 140; Treatment of — hemorrhage, 205; Measurement of — diameters 674
Penis, Cancer of, 423; Glans —,... 393
Pennsylvania practice law.. 159
Pepsin and pancreatic enzymes, 207; — cordial 326
Pepto-mangan (Gude) 536
Peptonuria 161
Perforating ulcer of lip 712
Perforation, typhoid, Operations for 497, 517
Pericarditis, suppurative, Treatment 99
Pericardium, Surgery of 149
Perineal lacerations, Mechanism and treatment 139
Perineorrhaphy, Cocaine anæsthesia for 445
Perineum lacerated 314, 315
Periostitis of hand 672
Peritoneal infection after supra-pubic 282
Peritoneum opened without trouble 118
Peritonitis, septic, Antistreptococcic serum for, 637; — of typhoid fever 497, 517
Permanganate of potash, see *Potash permanganate.*
Peronei tendons displaced 77

Personals, etc.:

Atkinson, Dr. Wm. B. 128
Bartlett, Garvens & Co. 404
Blackford, Jr., Dr. Charles Minor 368
Boyd, Dr. Frank 695
Brady, Dr. Elliott T. 468
Brock, Dr. C. W. P. 404
Claiborne, Dr. John Herbert 599
Coe, Dr. Henry W 63
Deboe, Dr. Wm. J. 61
De Garmo, Dr. W. B. 684
Dillard, Dr. John W. 436
Douglass, Dr. Morton 340
Drake, Dr. C. M. 276
Edwards, Dr. Joseph F. 307
Gross, Samuel D. 632
Harker, Dr. F. S. 31
Horner, Dr. Frederick 214
Hunter, Dr. Wm. G. 61
Jones, Dr. Henry C. 125
Jones, Dr. Wm. R 94
Johnston, Dr. Geo. Ben. 215
Lee, Dr. Benjamin 695
LeGrand, Dr. J. C. 403
Levy, Dr. Ernest C. 125
Lindsay & Blakiston 566
Long, Dr. J. W. 31
McGuire, Dr. Hunter 244, 307, 630, 750
Merrick, Dr. Thomas D 340
Miller, Mrs. 705
Moyer, Dr. Harold N. 568
Nash, Dr. Francis S 306
Nash, Dr. Herbert M 244
Neill, Dr. Edward Nicholas 500
O'Brien, Dr. M. W. 631
Oppenhimer, Dr. W. T. 32
Osler, Dr. Wm. 96
Paquin, Dr. Paul 300
Parke, Davis & Co. 307
Parker, Dr. W. Thornton 404
Pepper, Dr. William 695
Polk, Dr. Wm. M. 238
Pratt, Prof. E. H. 306
Price, Dr. Joseph 244, 631
Reade, Mr. Frank M. 125
Reed, Dr. R. Harvey 600
Saunders, Mr. Wm. B. 192, 599
Stone, Dr. I. S. 403
Treat & Co., E. B. 126
Vanderhilt, Mr. Geo. W. 300
von Ruck, Dr. Karl 63
Welch, Dr. Wm. H. 96, 695
Whitehead & Long, Drs. 500
Williams, Dr. Dawson 693
Williams, Dr. Robert F. 125

Pertussis (also *Whooping cough*), 103; Belladonna treatment for.. 199
Petit-mal 537
Petroleum, Angier's 606
Phantom appendicitis, Diagnosis.. 709
Pharmacists, Dispensing.. 330
Pharyngeal diphtheria, Serum for, 683; — tonsils 490
Pharyngitis and deafness 232
Phelps rapid knee excision 469
Phimosis cause of stone, 15; — and epilepsy 392
Phlebotomy in pneumonia 528, 529
Phlyctenular keratitis, Treatment 386
Phosphate of soda. See *Soda phosphate.*
Phosphates of pregnancy, 655; Urinary — diagnose pregnancy. 29
Phosphorus withdrawal causes nausea of pregnancy 413
Phthisin mentioned 633
Phthisis (also *Tuberculosis*), *Therapy of..* 13, 16
Phthisis bulbi 606
Physician (also *Doctor*), *His life work* 10
Physicians' Mutual Aid Society... 214
Physiologic resistance, Thiersch's law 21
Physiology and pathology 346
Phytolacca decandra juice for cancer 426
Piles. See *Hæmorrhoids.*
Pine trees in Arctic 253
Piperazine 441
Pipe smoking.. 516
Pityriasis in tuberculosis... ..279, 280
Placenta prævia 373, 699
Placenta adherent and hour-glass contraction, 665; Delivery of —, 310, 315, 342; — — post partum, 112; Retained — treatment, 313, 315, 342; Adherent — and sepsis 74, 187
Plague epidemic, 1897 589
Plasmins 718
Plaster, Passing of the 174
Plastic surgery, Lack of interest in... 437
Plate, dental in œsophagus removed 703, 713
Pleural hæmorrhage and shock, Diagnosis 443
Pleurisy, bilious, 570; — and tuberculosis, 219, 248; — fluid, clinically 358
Pneumatic irregularities, Deafness due to 230
Pneumococcus 529
Pneumogastric nerves primarily involved in tuberculosis.. 131
Pneumonia or pneumonitis, which? Treated by alcohol, 69; *Pneumonia toxæmia versus theory of obstruction in* —, 521, 527; *Pneumonia*, 569, 729; *Treatment of* — 646; Digitalis freely for —, 87; — clinically, 356; — and tuberculosis, 219; Exudative catarrhal — 245; Influenzal —, 527; Serum-therapy of —, ... 637
Pneumothorax in tuberculosis 246
Podagra. See *Gout.*
Podalic version 379
Poisoning by tansy, Case 69
Pokeroot. See *Phytolacca.*
Politics, Doctor in 328
Pollution of Potomac 567
Polygamy in Alaska 251
Polypus, nasal cystoma mistaken for 45, 53
Poncet's supra-pubic cystotomy... 297
Posterior spinal sclerosis. See *Locomotor ataxia.*
Potash permanganate for appetite of tuberculosis 17
Post-mortem delivery, Case 612
Post-nasal adenoids 608, 620
Post-operative intestinal paresis from nerve injury 429
Post partum inversio uteri 112
Post-partum hæmorrhage, 311, 313, 341
Potash, caustic, for epithelioma. 478, 479
Potassium iodide, Inhibiting effect 321
Potomac, Pollution of 567
Practice laws of various States, 158; — for sale, 339; Arrest of illegal — in Louisiana 727
Practising without law 693
Prepuce, irritated, causes night terror 533
Pregnancy (also *Gestation*) and appendicitis, 35; — diagnosed by urine phosphates, 29; Extra-uterine — (also *Ectopic Gestation*) twice in same patient, 643; Nausea and vomiting of — 412; Stomach troubles in — 163; — and septate uterus, 612; Tubal — and appendicitis diagnosed, 709; — and swollen turbinates, 358; Menthol for vomiting of —, 204, 152
Prescribing patent and proprietary medicines, evils of 73
Prize history of medicine in Virginia 371
Professional, medical, reform. 726
Professors should not be State board examiners, 134; — to be elected 61, 750
Proprietary medicines, Evils of prescribing 73
Prostate, secretion from, 7; Enlarged — causes stone, 15; Hypertrophied — causes urinary retention, 271, 297; Supra-pubic cystotomy for enlarged —, ... 118
Prostatic hypertrophy, New operation for 210
Prostatotomy and prostatectomy, 272; Supra-pubic. —, ... 119
Prostitution in Japan regulated.... 686
Protococcus nevalis 253
Protonuclein for cancer, 427; — for hepatic fever 16
Pruritus, Prescription for 157
Pseudo-diphtheria 319
Psoriasis cause of cancer 19
Psoriasis, with case in illustration .. 365
Psychiatry as therapeutic agent... 557
Psychology in medicine.. 669
Ptomains 581
Public health involved in medical licensure 138
Puerperal eclampsia, Guaiacol for, 120
Puerperal fever (also *Sepsis*), Antistreptococcic serum for, 622, 637, 641, 680; — — and adherent placenta 74

Puerperal infection.....575, 580
Puerperal septicæmia, Causes and Treatment..... 150
Puffy turbinate, Treatment 549
Pulmonary (also *Tuberculosis*) abscess, 734; Chronic — tuberculosis, 217; Treatment for — —, 720; Acute — obstruction, 521, 527
Pulse abdominal, 34; — in pneumonia..... .....528, 529
Pupils (also *Iritis*) dilated under ether, dangerous... 215
Pupils, Cilio-spinal center of.. .. 738
Purgation, Saline, in appendicitis, 34
Pus of tuberculosis, Benzoin for... 17
Pus-tubes and appendicitis, Diagnosis..... 708
Pyelo-nephritis of stone..... 16
Pyoctanin (or *Pyoktanin*) for epithelioma, 479; — for catgut ligatures, 86; — for cancer..... 425
Pyridin in cigarette smoking..... 619

Quarantine, National protest against. 561, 565; —, National, 658; — laws recommended. 715; — and U. S. M. Hospital Service..... 676
Quinia for hæmoptysis, 14; — in malaria, When to give, 455; — hypodermically for malaria ... 511
Quinin not specific in malaria, 601, 614

Rabies, Serum immunity from 636
Race and malaria, 116; —, Negro, Insanity and consumption in.... 129
Radical cure for inguinal hernia, Have we one? 446
Radio-humeral dislocation.. 172
Railway without chief surgeon, 276: — spine and shock. 445
Rale, crepitant, persistent..... 407
Reasoning mania 747
Reciprocity in medical licensure..... 133
Rectal trouble due to rectal feeding. 283
Rectum prolapsed and retracted at will..... 687
Red snow.... 252
Reflex hemiplegia. 742
Reflex troubles due to swollen middle turbinate..... 358
Reform, Medical, professional..... 726
Registration laws, Medical..... 332
Relapsing appendicitis, 33; — typhoid fever.... 496
Reminiscences—Medical and hygienic of the Arctic..... 250
Remittent fever, Bilious. 615
Renal (also *Kidney*) abscess, Case of, 76; — disease and surgical operation, 110; — crisis and appendicitis, Diagnosis.... 710
Resection (also *Excision*) of knee. 459
Resistence, Physiologic, Thiersch's law of..... 21
Respiration, Artificial.. 116
Respiratory tubes Ciliated cells in 577
Rest treatment of neurasthenia... 165
Retention of urine due to prostate, Treatment.....271, 297
Retroversion of uterus, Operation 115
Rhagades 388
Rheumatic neuroses..... 465
Rheumatism in Alaska, Springs treatment of, 252; —, Hot-air apparatus for, 367; — due to malaria, 410: —, Chronic tartarlithine for, 460; — and tabes, 744; — and tonsillitis, 491; —, bacteriology of acute..... 718
Rhinitis and deafness, 232; — due to enlarged lingual tonsil, 258; — and coryza synonymous..... 463
Rhinology. See *Nose*.
Rhode Island practice law..... 160
Richmond doctors' salaries..... 61
Rider's sprain..... 77
Ring of contraction of uterus, 697, 698
Röntgen ray (also *X-Ray*) to diagnose spinal disease, 115; — — and tight lacing, 256; — —,.... 596
Roses in Arctics..... 253
Roster of Virginia surgeons in Confederacy..... 727
Rupophobia 743
Rupture of heart valves, case, 233; — *of uterus, Etiology, diagnosis and treatment*, 697; — of perineum (also *Perineal laceration*), 139; — of uterus during abortion 688
Rush monument fund, etc., 154; — —, Colorado's contribution to, 244

Salicylate of soda, see *Sodium salicylate*.
Salicylic acid injections for cancer..... 426
Saline solution absorbed by colon; 689; — — for intravenous use, 680; — purgative for appendicitis 34
Saliva clinically..... 356
Salmon industry in Alaska..... 253
Salpingitis and appendicitis diagnosis, 36; Treatment of suppurative —, 76; Vaginal section for —,..... 209
Salpingo-öophorectomy..... 383
Sanarelli's bacillus icteroide, 300, 595; — serum for yellow fever.. 635
Sanatorium treatment for pulmonary tuberculosis 450
Sanitarium treatment for tuberculosis..... ....17, 63
Sapræmic puerperal infection..... 580
Sarcoma. 347; — of breast. 424. Histology of —, 4; Histological differentiation between — and carcinoma, 59; Serum therapy of —, ...637, 679
Sarcomatous, Fibro-, tumor of cerebellum 238
Sartorius muscle displaced..... 79
Scarlatina causes tonsillitis, 491; Antistreptococcic serum in —, 636; Carbolic acid for —,..... 684
Scarlatinal nephritis, Milk prophylaxis of..... 96
Scarlatinin mentioned..... 633
Scarlet fever, see *Scarlatina*.
Schleich's cocaine solutions.....462, 621
Sciatica, Hot air apparatus for..... 367
Scirrhus (also *Cancer*) in healthy tissue..... 427
Sclerosing action of acids of fermentation..... 209
Sclerosis of liver, 117; Ataxia of posterior —, 513; Posterior spinal — (also *Locomotor ataxia*), 208; — of sensory neuron..... .. 744
Scoliosis and spinal caries..... 114
Scrotal hernia. See *Hernia Scrotal*.
Scurvy in ascites, 250; Statistics wanted about infantile —,..... 340
Sea-sickness, Prescription for..... 719
Seborrhœic dermatitis and psoriasis 366
Sectional, abdominal, in America, 716
Semen clinically 357
Sepsis and adherent placenta, 74, 187; Auto-antitoxin for —, 679; Transfusion in —, ... 518
Septate uterus and vagina..... 611
Septicæmia, Puerperal, 150, 580; Antistreptococcic serum for —, 622, 637, 641
Septic intoxication and shock, Diagnosis..... 445
Serum-albumen of malignancy, 1; Antistreptococcic —, 595; Goat's blood — for diphtheria, 404; Improved antidiphtheritic —, 75; Mariagliano's — for tuberculosis, 636; Normal horse-blood — for tuberculosis, 234; Paquin's antitubercle —,.....256, 300, 636
Serum-therapy of cancer, 425; — — discussion, 679; — — of diphtheria, 337; Information wanted about — —, 468; — — of septicæmia, 581; — — of tuberculosis, 13, 16, 18, 28, 63, 185, 339, 720; — — in Virginia, 404, 536; *Report on — — in general in Virginia*..... 633
Service, Naval, American Medical, 667: U. S. M. Hospital — and yellow fever.....561, 658, 675, 715
Sexual neurasthenia, 508; — perversion 743
Shadowgraphs (also *Skiagraphs*) for diagnosis..... 710
Shaking palsy. See *Paralysis agitans*.
Shaman, Eskimo, Tricks of..... 251
Shingles, New synonym for 563
Shock, Diagnosis of, 441; — of anæsthesia, 471; — of excision, 471; Transfusion for —,..... 518
Shogi, or licensed prostitutes..... 686
Shoulder injuries..... 172
Sickness of pregnancy, morning... 654
Skiagraph. (See *Shadowgraph*; also *X-ray*)..... 737
Skin cancer, see *Epithelioma*; — disease, see *Psoriasis*; — of tuberculosis 279
Small-pox (also *Variola*) in Atlantic States, 612; — — among Eskimos, 253; — — epidemics last year, 588, 591; Inoculations against — —,..... 633
Smoker's neuroses, 516; — throat.. 613
Smoking cigarettes, Effects of..... 612
Snow-blindness prevented..... 252
Social evil in Japan regulated..... 686

Society, Board Proceedings, etc.:

Alabama, State Medical Association of..... 750
American Academy of Railway Surgeons..... 403

American Laryngological, Rhinological and Otological Society—Southern Section..... 714
American Medical Association, 32, 95, 126, 128, 153, 160, 693, 695
American Medical Publishers' Association..... 32, 128, 630
American Public Health Association 96
Army Medical Examining Board..... 664
British Medical Association..... 215
California, State Medical Society of... 750
District of Columbia Medical Association..... 750
District of Columbia, Medical and Surgical Society, 16, 53, 242, 270, 495, 562, 618
Florida Medical Association..... 750
Georgia, Medical Association of.....32, 750
Indiana State Medical Society..... 678
International Association of Railway Surgeons..... 94
International Medical Congress, Twelfth..... 62
Kansas Medical Society..... 750
Kentucky State Medical Society..... 128
Louisiana State Board of Health, 631, 727
Louisiana State Board of Medical Examiners..... 727
Louisiana State Medical Society..... 750
Maine Medical Association..... 128
Maryland, Medical and Chirurgical Faculty of..... 750
Massachusetts Medical Society..... 128
Minnesota State Medical Society..... 128
Mississippi State Medical Association..... 750
Mississippi Valley Medical Association..... 215, 307, 468
Missoura State Board of Health..... 664
New Jersey, Medical Society of..... 128
New York County Medical Society... 693
North Carolina, Medical Examining Board of..... 128, 189
North Carolina, Medical Society of State of..... 32, 128, 727
Ohio State Medical Examining Board 728
Oregon State Medical Society..... 128
Physicians' Mutual Aid Society..... 214
Quarantine Convention of South Atlantic and Gulf States..... 715
Rhode Island Medical Society..... 128
Richmond Academy of Medicine and Surgery.....75, 106, 207, 496, 585, 679, 693, 712
St. James Dispensary, Clinical Society of..... 527, 580, 614
Seaboard Medical Association..... 631
South Carolina Medical Association.. 750
South Dakota State Medical Society.. 128
Southern Surgical and Gynæcological Society..... 536
Southwest Virginia Medical Association..... 567
Tennessee State Medical Society..... 750
Texas State Medical Society..... 750
Tri-State Medical Association of Western Maryland, Western Pennsylvania and West Virginia..... 567
Tri-State Medical Society of Alabama, Georgia and Tennessee...403, 750
U. S. Army Medical Examining Board..... 214
Virginia and North Carolina Tidewater Medical Association..... 600
Virginia, Medical Examining Board of, 128, 160, 213, 244, 262, 276, 340, 394, 403, 436, 536, 630, 632
Virginia, Medical Society of, 31, 160, 213, 244, 274, 303, 337
Virginia State Board of Health....215, 340
Western Ophthalmological, Otological, Laryngological and Rhinological Association..... 750
West Virginia, Medical Society of..... 128

Societies (also *Boards, Societies, etc.*), 153; 154; *Value of medical — to public*, 349; Medical — meetings in April..... 750
Soda phosphate for urticaria..... 661
Soda or sodium salicylate for gallstone, 24; — — for neurasthenia, 166; — — for tonsillitis..... 360
Solanum carolinense for epilepsy. 545
Sothoron's improved traction forceps..... 291
South Carolina practice law..... 160
South Dakota practice law..... 160
Southern doctors in U. S. M. Hospital service..... 675
Southern Railway without chief surgeon..... 276
Southern States health record..... 84
Space-center nerve..... 744
Spastic paralysis..... 541
Specific in malaria, Quinine not. 601, 614
Speech-centers localized..... 97
Spermatorrhœa, its causes, etc..... 7
Spinal caries, Early diagnosis of, 113; *Injuries of — cord*, 738; Case of — hæmorrhage, 739; Mind cure for phantom — disease..... 670
Spinal meningitis, Cerebro.....593, 750
Spinal sclerosis, posterior, see *Locomotor ataxia.*
Splay-foot due to ankle injury..... 79
Spleen on right side, 297; — extirpated..... 149
Splint, Van Arsdale's, for fractured femur, 260; Wood-fibre —, 174, 175; — for knee trouble..... 458
Sprains and strains of joints, 76; Speedy treatment of —, 117; Hot-air apparatus for —,..... 367
Sputum (also *Expectoration*) clinically, 356; — of tuberculosis..... 221
Squint (also *Strabismus*)..... 607
Staining blood technique for microscopy..... 155
State control of medical practice, 135; Value of — medical societies, 349; State care of epileptics. 369
Statistics, General gynæcological, 197; Negro — in United States. 116
Status epilepticus..... 537
Stenosis and atresia in labor..... 176
Stercorin and cholesterræmia..... 144
Sterilization in surgery, Careful... 421
Sterilized catgut, To prepare..... 466
Stokers, Cramps affecting..... 552
Stomach (see *Gastric;* also *Gastro-intestinal*) catarrh, Argentannin for, 118; — contents clinically considered, 356; Size and location of —, 661; — and liver relations to gout, 204; — troubles of pregnancy..... 654
Stone in bladder (also *Calculus*), *A clinic*, 15; Constituents of — — —, 15; *Comparison of different operations for* — — —, 167; Supra-pubic cystotomy for — — —, 118, 282
Stools white in cholelithiasis..... 20
Strabismus due to syphilis, 108; Convergent —,..... 607
Straight-jacket, Obstetric..... 187
Strains and sprains of joints..... 76
Strangulated omental hernia..... 435
Street-car ambulances..... 567
Streptococcus serum, Uses of..... 649
Stricture, urethral, in lithotrity... 167
Strychnia for tuberculosis...13, 16, 17
Students, medical, readmitted in Paris, 669; Minimum standard for medical —,..... 136
St. Vitus dance. See *Chorea.*
Substitute for Whitehead's operation. 384
Suggestion therapeutics..... 670
Sulphide of hydrogen odor in antral abscess..... 554
Sulphonal for epilepsy..... 545
Summer diarrhœa of children, 408; Lactic acid for — — — —,..... 96
Sun fever or sun stroke. See *Insolation.*
Superstition in disease..... 560
Suppuration by gall stone..... 19
Suppurative pericarditis, Treatment, 99; Treatment of — salpingitis..... 76
Supra-pubic cystotomy for stone, 282; McGuire's — —, 16, 118, 272, 297, 307
Surgeons needed on ships, 566; Virginia — in Confederate Service, 727; No chief — on Southern railway..... 276
Surgery, Address in, 146; Abdominal —, 68, 433; Clean — in minor and emergency cases, 420; Cocaine in —, 460; Lack of interest in plastic —, 437; History of — in Virginia, 371; — and renal disease, 110; — *of typhoid fever*..... 516
Surgical kidney..... 16
Surgical treatment of suppurative pericarditis..... 99
Suture, Mes-ethmo vomerine..... 550
Sutures for abdominal surgery..... 85
Suturing of wounds, Absorbic band. 325
Swallowed, Foreign bodies..... 713
Sweats, Night, of tuberculosis, 278; Treatment of night — of tuberculosis.....14, 15, 453
Swedish manual gymnastics for bowel..... 484
Syncope due to urticaria, 497; — of shock and of hemorrhage..... 441
Synovitis (also *Dry synovitis*) of hand, 672; Hot air apparatus for —,..... 367
Syphilis, Histogenesis of, 3; — among Eskimos, 251; — in Japan, 687; — in negroes, 133; Late lesions in extrinsic muscles in —, 108; Serum-therapy of —,..... 637
Syphilitic formative osteitis..... 493
Syringe, hypodermic (also *Hypodermic syringe*) improved, 402; — — in malaria..... 454

TA., T. O., T. R., as applied to tuberculin, etc.....49, 50
Tabes mistaken for rheumatism... 744
Tansy poisoning, Case of..... 71
Tarniers' forceps, Sothrons' modified..... 291
Tartarlithine for chronic rheumatism..... 460
Tax on Virginia doctors, 30; — on North Carolina doctors..... 142
Technique of abdominal hysterectomy..... 288
Teeth, artificial, removed from œsophagus.....703, 713
Teething and summer diarrhœa not synonymous..... 408
Temperature changes during sleep in tuberculosis..... 279
Tendo-vaginitis of hand..... 672
Tennessee practice law..... 160
Tenotomy, Eye, for convergent squint..... 607
Test fevers by quinin, absurd to... 604

Testicle in hernia.. 180
Testimonials of doctors, Evil of .. 73
Testimony, expert, compulsory in Illinois 599
Tetanus antitoxin, 594; — — in tetanus, 622; —, serum therapy of. 537, 641
Tetterwort for cancer... 427
Texas doctors, licensed, 331; no — practice law, 160; Reform movement advocated in —,.. 726
Thecitis 80
Therapeutic test by quinin absurd. 604
Thermal or thermic fever. See *Insolat on*
Thermo-cautery for epithelioma . 479
Thermometry of tuberculosis during sleep 279
Thiersch's law of physiologic resistance 21
Thoracic, Intra , hæmorrhage and shock 441
Thoracico-abdominal paralysis..... 738
Throat deafness 230
Thyroid Therapy in some Nutrition Diseases, 605, 618; — extract for uterine fibroids, 59; pulverized — in gouty obesity 606
Thyroiditis, thyroid therapy for... 618
Tic douloureux and treatment 361
Tincture, Warburg's 603
Titubation (see also *Ataxia, Cerebellar*). 513
Tobacco Neuroses, 515; — smoking. 612
Tongaline, Its uses, etc. 43
Tongue cancer..... 19
Tonsil, lingual, hypertrophied, Treatment 257, 270
Tonsilliths.. 493
Tonsillitis—Tic Douloureux and Clinical Treatment, 47; Habitat of follicular —,..... 489
Tonsils chrolically diseased 489
Toothache, prescription for. 719
Tooth causing hemiplegia, 742; Fatal hæmorrhage after — extraction .... —
Torticollis (also *Wry neck*) 114
Toxæmia, Septic, and shock, Diagnosis, 445; — of pneumonia, 521, 527
Toxic effects of constipation... 483
Toxins of pneumonia..... 528
T. R. tuberculin 49, 50, 526, 636
Trachea, ciliated cells of..... 577
Trachoma, Jequirity for.. 211
Traction-rod forceps, Improved.... 291
Transfusion in typhoid fever, 517; — in septicæmia..... 581
Transposition of all Organs of Body. 297
Trepine for cerebellar tumor..... 239
Tri-acid solution, Ehrlich's 155
Triangular splint in femur fracture, Van Arsdale's... 260
Trikresol to prevent contamination 237
Trional in epilepsy 545
Trismus nascentium (see also *Tetanus*), Tetanus antitoxin in..... 622
Trunecek and Czerny's formula for cancer 426
Tubal pregnancy, Rupture, 90; — — (see *Ectopic*), 644; diagnosis of — disease and appendicitis... 708
Tubercle bacilli (see *Bacillus*), 245, 356
Tubercular meningitis, Eye symptoms in, 201, 202; — (see *Consumptives*) people, 211; Diagnosis of — knee 456
Tuberculin in Dermatology, 526; Caution about T. R. —, 467; — for tuberculosis, 13, 721; Koch's —, 636; —, — modified, 450; Koch's new —, its theory, make, effects, etc., 47, 596; — perfected, 28; — prescription 236
Tuberculinum purificatum for tuberculosis..... 721
Tubercular plasmin..... 718
Tuberculosis, Chronic Pulmonary, 217, 245, 277; — and cancer, 2; — (also *Phthisis*,), 13; Therapy of —, 16; Tuberculin (new) for —, 48; Treatment of —, 63; Diagnosis of — of spine, 113; Diagnostic sign of — of bladder and urethra, 116; — (also *Consumption*), 129; Normal horse-blood for —, 234; Paquin's serum in —, 256, 300; Bacteriology of —, 318, 323; Antitoxin of —, 339; Sanatorium treatment of — of lungs, 450; Treatment of —, 599; Serum therapy in —, 635, 640, 680, 681; Disastrous treatment of —, 688; Specific germ treatment of —, ... 720
Tuberculosorum..... 280
Tubes, fallopian, inflamed, see *Salpingitis*.
Tumor of cerebellum, Necropsy, 511; Anastomosis for cæcal —, 143; Cerebellar —, 238; — albus (see *White swelling*,); Diagnosis of — and appendicitis, 709; Malignant factor in —, 1; — of breast, 424; — of uterus, see *Fibroid*.
Turbinate, inferior, Treatment of puffy, 540; Swollen — cause reflexes..... 358
Typhoid and typho-malarial fever, 104; Bacteriology of — —, 321; Relapsing — —, 496; Operation for — ulceration and perforation, 497, 517; Surgery of — —, 516; Treatment of — pneumonia, 573; — fever outbreaks in 1897, 593; Woodbridge treatment of — —, 623, 689; Serum therapy of — —, 636: Treatment of — pneumonia, 647; Diagnosis of — fever and appendicitis, 709; — pneumonia..... 729
Typho malarial fever—What si it? 104
Typho-malarial fever, a misnomer... 203
Typho-Malarial Fever.....353, 614, 618
Typhus and typhoid fevers, 105; — fever outbreak in 1897, 593; Serum therapy in — fever..... 636

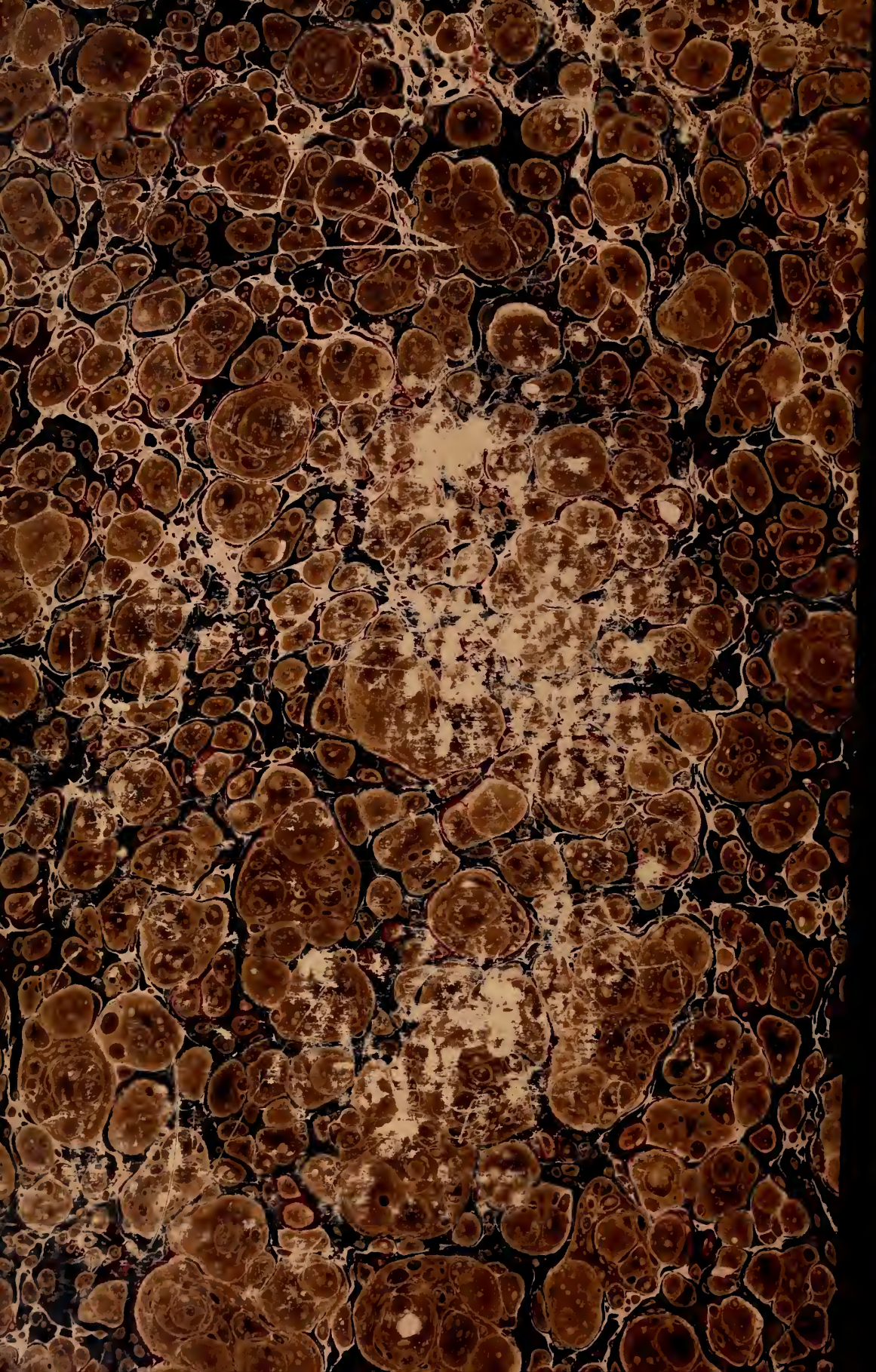
Ulcer of cornea, Treatment, 292; Perforating — of lip, 712; Medical treatment of —, 59; Powder for varicose — 224
Umbilical pain in intestinal cancer 600
Unavoidable uterine hemorrhage.. 374
United States Marine Hospital Service and Yellow Fever, 561, 658, 675, 715
United States Army medical officers, 694; — — doctors and Montreal, 215; Negro statistics of — — 116
University or Virginia Alumni in Navy 667
Uranium nitrate in diabetes..... 719
Urea affected by diet, 111; Minimum amount — safe in surgery, 111; — compared to cholesterin, 16; — increased in hay-fever... 463
Ureter, sacculated, and appendicitis, Diagnosis 710
Urethra and bladder, Signs of tubercular..... 116
Urethral discharges clinically, 357; Various — —, 6; — Stricture in lithotrity..... 167
Urethritis, posterior, Argentannine for 118
Uric acidæmia of hay-fever..... 463
Uric acid in neurosthenia and allied states, 161; — — and lithæmia, 204; — — diathesis..... 438
Uricedin renders urine alkaline... 441
Urinary calculi dissolved by Buffalo Lithia Water, 93; Signs of tubercular — organs, 116; — phosphates diagnose pregnancy 29
Urine, carbolization of, 685; Chyle rare in —, 89; — clinically, 357; Treatment of retention of — due to prostate, 271, 297: Chlorides in — of pneumonia, 736; Suppression of — in infant..... 34
Urine, carbolization of, 685; Chyle rare in —, 89; — clinically, 357; Treatment of Retention of — due to prostate, 271, 297; Chlorides in — of pneumonia, 736; Suppression of — in infant..... 34
Urticaria with syncope, 497; Prescription for —, 276; Soda phosphate for —..... 661
Utah practice law..... 160
Uterine cancer (also *Cancer*), 435; — — early recognized, 86; — cervix, see *Cervix uteri*; Medical treatment of — fibroids, 59, 434; Section for — — (also *Fibroids*) 27
Uterus ablated or extirpated, see *Hysterectomy*; Diagnose and operate early for cancer of —, 415; Fibroids of — surgically, 435; Hour-glass contraction of, 311, 313, 315, 665; — inverted post partum, 112, 488; Operations for diseased, 546; Etiology, diagnosis, and treatment of ruptured —, 697; — ruptured during abortion, 688; Operations for retroverted —, 115; Septate — and vagina, 611; Surgery of, 68

Vaccinate at once..... 512
Vaccination 633
Vaccines (see *Inoculations*).
Vagina, uterus and, separated..... 611
Vaginal Atresia, Cases, 7; — douches in labor, 152; — atresia and stenosis in labor, 176; Technique of — section for appendages, 209; — douche after la-

bor, 317; — discharges clinically, 357; — hysterectomy for cancer 416
Valsava's treatment 335
Valves of heart ruptured 233
Van Arsdale's Triangular Splint in Fracture of Femur in Children ... 260
Varicose veins complicate sprains, 77; powder for — ulcers. 224
Variola (see also *Small-pox*) 588, 591
Vas deferens in herniotomy 448
Venereal diseases in Alaska...251, 252
Venesection in pneumonia 572
Ventral hernia. See *Hernia, Ventral.*
Ventro-fixations of uterus 115
Vermont practice law 160
Version of uterus. (See *Retroversino;* also *Anteversion*) Padalic —, ... 379
Vertebra carious, early diagnosis.. 113
Vertigo, cerebellar, 238, 241, 242; — of brain lesion 512
Vesical calculus, supra-pubic cystotomy for 282
Vienna anæsthetic mixture 621
Violets in Arctics. 253
Virginia doctor's license tax, 30; La grippe in —, 53; — practice law, 160; -- medical history, 244; Care of epileptics in —, 369; History of medicine, etc., in —, 371; Serum therapy in —, 633; History of — navy, 667; — surgeons in Confederate army and navy 727
Virus, diluted, Friere's yellow fever 635
Vital statistics 332
Vivisection 329, 348, 349
Voice changed by adenoids 609
Volvulus 495
Vomereine suture, Mes-ethno 550
Vomiting of pregnancy, 654; Causes and treatment of — — —, 412; Menthol for — — —, 152, 204; — of blood by infant, 585; — of brain lesion, 512; Prescription for — of gastric cancer 179
Vulva, cervix uteri beyond, in labor 166

Warburg's tincture 603
Washington practice law. 160
Wasting diseases, goat's blood serum in 404
Water absorption of free and albuminoid ammonia, 227; Value of drinking —, 440; New York — causing cramps 552
Watery extract of bacilli for tuberculosis 721
Waukyln-Nessler test of ammonia. 227
West Virginia and Florida healthiest of States, 84; — — practice law 160
Whiskey for typhoid pneumonia.. 573
White swelling, treatment 456
Whitehead's operation for piles, Substitute for 384
Whitlow, Treatment of 673
Whooping cough (also *Pertussis*), Bromoform for 103
Widal test 321, 322, 358, 624
Wines, coca, Spurious 216
Wintergreen, Oil of 360
Wisconsin practice law 160
Woman in medicine 329
Womb. See *Uterus.*
Woodbridge treatment of typhoid fever 623, 689
Wood-fibre splinting for fracture. 174, 175
Worm cause of appendicitis, 608; diagnosed intestinal —, ... 724
Wounds, absorbic suturing of 325
Wrist sprain, Treatment 77
Wry neck (see also *Torticollis*) 114
Wunche's prescription for colds... 604
Wyoming practice law. 160

Xanthine retained in gouty neuroses 466
Xerosis after use of jequirity 211
X-Ray (also *Röntgen*, also *Shadowgraph*, also *Skiagraph*), *as means of diagnosis*, 710; — — a factor in diagnosis 737, 596
Xylol 523

Yellow fever, 1897, 287; — — 1898, 403; Agglutination diagnosis of — —, 724; — — bacillus, 595; Sanarelli's — — —, 300; — — — antitoxin, etc., 635; National quarantine and — — epidemics, 561, 565, 658, 675, 715
Yoshiwara 686
Yo-taka (or street walker) 686

Zinc chloride for epithelioma 479